

BCS 04-5003-PCT\_Erhöhte Akt. OK1 & R1\_SEQUENZPROTOKOLL.ST25  
SEQUENCE LISTING

<110> Bayer CropScience GmbH

<120> Plants with increased activity of multiple starch phosphorylating enzymes

<130> BCS 04-5003-PCT

<150> EP 04090089.6

<151> 2004-03-05

<150> US 60/550,021

<151> 2004-03-05

<150> EP 04090284.3

<151> 2004-07-21

<150> EP 04090121.7

<151> 2004-03-29

<160> 17

<170> PatentIn version 3.1

<210> 1

<211> 3591

<212> DNA

<213> Arabidopsis thaliana

<220>

<221> CDS

<222> (1)..(3591)

<223>

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act Thr	aga Arg	aac Asn	tca Ser 20	tca Ser	tca Ser	tca Ser	ctt Leu	cct Pro 25	aga Arg	ctc Leu	gtt Val	aac Asn	atc Ile 30	act Thr	cac His	96
aga Arg	gtt Val	aat Asn 35	ctc Leu	agc Ser	cac His	caa Gln	tct Ser 40	cac His	cga Arg	ctc Leu	aga Arg	aac Asn 45	tcc Ser	aat Asn	tct Ser	144
cgt Arg	ctc Leu 50	act Thr	tgc Cys	act Thr	gct Ala	act Thr 55	tct Ser	tct Ser	tcc Ser	acc Thr	att Ile 60	gag Glu	gaa Glu	caa Gln	cgg Arg	192
aag Lys 65	aag Lys	aaa Lys	gat Asp	gga Gly	tca Ser 70	gga Gly	acg Thr	aaa Lys	gtg Val	agg Arg 75	ttg Leu	aat Asn	gtg Val	agg Arg	tta Leu 80	240
gat Asp	cat His	caa Gln	gtt Val	aat Asn 85	ttt Phe	ggt Gly	gac Asp	cat His	gtg Val 90	gct Ala	atg Met	ttt Phe	gga Gly	tca Ser 95	gct Ala	288
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aat Asn	gga Gly	tgg Trp 115	gtt Val	tgt Cys	gag Glu	ttg Leu	gaa Glu 120	ctt Leu	gac Asp	ggt Gly	ggt Gly	cag Gln 125	gtt Val	ttg Leu	gag Glu	384
tat Tyr	aag Lys 130	ttt Phe	gtc Val	att Ile	gtt Val	aag Lys 135	aat Asn	gat Asp	ggt Gly	tca Ser	ctt Leu 140	tca Ser	tgg Trp	gaa Glu	tct Ser	432
ggt Gly 145	gat Asp	aat Asn	cgt Arg	gtc Val	ctt Leu 150	aag Lys	gtt Val	cca Pro	aat Asn	tct Ser 155	ggg Gly	aat Asn	ttt Phe	tct Ser	gtt Val 160	480
gtt Val	tgt Cys	cat His	tgg Trp	gat Asp 165	gct Ala	act Thr	aga Arg	gaa Glu	acc Thr 170	ctt Leu	gat Asp	ttg Leu	cct Pro	cag Gln 175	gag Glu	528
gtt Val	ggt Gly	aat Asn	gat Asp 180	gat Asp	gat Asp	gtt Val	ggt Gly	gat Asp 185	ggt Gly	ggg Gly	cat His	gag Glu	agg Arg 190	gat Asp	aat Asn	576
cat His	gat Asp	gtt Val 195	ggt Gly	gat Asp	gat Asp	aga Arg	gta Val 200	gtg Val	gga Gly	agt Ser	gaa Glu	aat Asn 205	ggt Gly	gcg Ala	cag Gln	624
ctt Leu	cag Gln 210	aag Lys	agt Ser	aca Thr	ttg Leu	ggt Gly 215	ggg Gly	caa Gln	tgg Trp	caa Gln	ggt Gly 220	aaa Lys	gat Asp	gcg Ala	tcc Ser	672
ttt Phe 225	atg Met	cgt Arg	tct Ser	aat Asn	gat Asp 230	cat His	ggt Gly	aac Asn	aga Arg	gaa Glu 235	gtt Val	ggt Gly	aga Arg	aat Asn	tgg Trp 240	720
gat Asp	act Thr	agt Ser	ggt Gly	ctt Leu 245	gaa Glu	ggc Gly	aca Thr	gct Ala	ctt Leu 250	aag Lys	atg Met	gtt Val	gag Glu	ggt Gly 255	gat Asp	768
cgc Arg	aac Asn	tct Ser	aag Lys	aac Asn	tgg Trp	tgg Trp	aga Arg	aag Lys	ctt Leu	gaa Glu	atg Met	gta Val	cgc Arg	gag Glu	gtt Val	816

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Glu	Asp	Gly	Gly	His	His	Arg	Pro	Asn	Arg	His	Ala	Glu	Ile	Ser	Arg	
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ctt	ata	ttc	cgt	gag	ttg	gag	cac	att	tgc	agt	aag	aaa	gat	gct	act	1008
Leu	Ile	Phe	Arg	Glu	Leu	Glu	His	Ile	Cys	Ser	Lys	Lys	Asp	Ala	Thr	
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cca	gag	gaa	gtg	ctt	gtt	gct	cgg	aaa	atc	cat	ccg	tgt	tta	cct	tct	1056
Pro	Glu	Glu	Val	Leu	Val	Ala	Arg	Lys	Ile	His	Pro	Cys	Leu	Pro	Ser	
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ttc	aaa	gca	gag	ttt	act	gca	gct	gtc	cct	cta	act	cgg	att	agg	gac	1104
Phe	Lys	Ala	Glu	Phe	Thr	Ala	Ala	Val	Pro	Leu	Thr	Arg	Ile	Arg	Asp	
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ata	gcc	cat	cgg	aat	gat	att	cct	cat	gat	ctc	aag	caa	gaa	atc	aag	1152
Ile	Ala	His	Arg	Asn	Asp	Ile	Pro	His	Asp	Leu	Lys	Gln	Glu	Ile	Lys	
																380
cat	acg	ata	caa	aat	aag	ctt	cac	cgg	aat	gct	ggt	cca	gaa	gat	cta	1200
His	Thr	Ile	Gln	Asn	Lys	Leu	His	Arg	Asn	Ala	Gly	Pro	Glu	Asp	Leu	
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Tyr	Ser	Gly	Asp	Phe	Val	Glu	Gln	Phe	Lys	Ile	Phe	His	Asn	Glu	Leu	
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aaa	gat	ttc	ttt	aat	gct	gga	agt	ctc	act	gaa	cag	ctt	gat	tct	atg	1344
Lys	Asp	Phe	Phe	Asn	Ala	Gly	Ser	Leu	Thr	Glu	Gln	Leu	Asp	Ser	Met	
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aaa	att	tct	atg	gat	gat	aga	ggt	ctt	tct	gcg	ctc	aat	ttg	ttt	ttt	1392
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gaa	tgt	aaa	aag	cgc	ctt	gac	aca	tca	gga	gaa	tca	agc	aat	gtt	ttg	1440
Glu	Cys	Lys	Lys	Arg	Leu	Asp	Thr	Ser	Gly	Glu	Ser	Ser	Asn	Val	Leu	
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gag	ttg	att	aaa	acc	atg	cat	tct	cta	gct	tct	tta	aga	gaa	aca	att	1488
Glu	Leu	Ile	Lys	Thr	Met	His	Ser	Leu	Ala	Ser	Leu	Arg	Glu	Thr	Ile	
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Tyr	Phe	Phe	Val	Leu	Leu	Ser	Arg	Phe	Leu	Asn	Ala	Leu	Glu	Thr	Met	

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cag Gln	atc Ile	tca Ser 675	aag Lys	ctc Leu	tgc Cys	act Thr	gtt Val 680	ctt Leu	cta Leu	aaa Lys	gct Ala	gta Val 685	aga Arg	aat Asn	tca Ser		2064
ctt Leu	ggt Gly 690	tct Ser	gag Glu	ggc Gly	tgg Trp	gat Asp 695	gtc Val	gtt Val	gta Val	cct Pro	gga Gly 700	tcg Ser	acg Thr	tct Ser	ggg Gly		2112
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tct Ser	ggt Gly	ggt Gly	cct Pro	att Ile 725	att Ile	ctc Leu	ttg Leu	gtc Val	aat Asn 730	aaa Lys	gct Ala	gat Asp	ggc Gly	gat Asp 735	gaa Glu		2208
gag Glu	gta Val	agt Ser	gct Ala 740	gct Ala	aat Asn	ggg Gly	aac Asn	ata Ile 745	gct Ala	gga Gly	gtc Val	atg Met	ctt Leu 750	ctg Leu	cag Gln		2256
gag Glu	ctg Leu	cct Pro 755	cac His	ttg Leu	tct Ser	cac His	ctt Leu 760	ggc Gly	gtt Val	aga Arg	gcg Ala	cgg Arg 765	cag Gln	gag Glu	aaa Lys		2304
att Ile	gtc Val 770	ttt Phe	gtg Val	aca Thr	tgt Cys	gat Asp 775	gat Asp	gac Asp	aag Lys	gtt Val 780	gct Ala	gat Asp	ata Ile	cga Arg			2352
cga Arg 785	ctt Leu	gtg Val	gga Gly	aaa Lys	ttt Phe 790	gtg Val	agg Arg	ttg Leu	gaa Glu	gca Ala 795	tct Ser	cca Pro	agt Ser	cat His	gtg Val 800		2400
aat Asn	ctg Leu	ata Ile	ctt Leu	tca Ser	act Thr	gag Glu	ggt Gly	agg Arg	agt Ser	cgc Arg	act Thr	tcc Ser	aaa Lys	tcc Ser	agt Ser		2448

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gcg acc aaa aaa acg gat aag aac agc tta tct aag aaa aaa aca gat	Ala Thr Lys Lys 820 Thr Asp Lys Asn Ser 825 Leu Ser Lys Lys 830 Thr Asp															2496
aag aag agc tta tct atc gat gat gaa gaa tca aag cct ggt tcc tca	Lys Lys Ser 835 Leu Ser Ile Asp Asp 840 Glu Glu Ser Lys Pro 845 Gly Ser Ser															2544
tct tcc aat agc ctc ctt tac tct tcc aag gat atc cct agt gga gga	Ser Ser 850 Asn Ser Leu Leu Tyr 855 Ser Ser Lys Asp Ile 860 Pro Ser Gly Gly															2592
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gct gca tgt ggt ctt ctt gca tct tta gca gaa gcc tct agt aaa gtg	Ala Ala Cys Gly Leu Leu Ala Ser Leu Ala Glu Ala Ser Ser Lys Val 895															2688
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gaa gaa aag ttt gcg tct ttg cta gaa aaa cta gaa acc gcc aga cct	Glu Glu 930 Lys Phe Ala Ser Leu Leu Glu Lys Leu Glu Thr Ala Arg Pro 940															2832
gag ggt ggt gag cta gac gac ata tgt gac cag atc cat gaa gtg atg	Glu Gly 945 Gly Glu Leu Asp Asp 950 Ile Cys Asp Gln Ile His Glu Val Met 960															2880
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gac tta gcc gga atg tca gct gca gga ctc tat gaa tca atc cct aac	Asp Leu Ala 995 Gly Met Ser Ala Ala Gly Leu Tyr Glu Ser Ile Pro Asn 1005															3024
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caa gaa atg ctt tcg ccg gac tta tca ttc gtt ctg cac aca gtg	Gln Glu 1055 Met Leu Ser Pro Asp 1060 Leu Ser Phe Val Leu His Thr Val 1065															3204
agt cca gct gat ccg gac agt aac ctt gtg gaa gcc gag atc gct	Ser Pro Ala Asp Pro Asp Ser Asn Leu Val Glu Ala Glu Ile Ala 1070															3249

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1075	tgg aga ctc gct tcg ggt aag ctc gac ggg att gta caa acc tta	3339
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1080	gct ttc gca aac ttc agc gaa gag ctt ctt gtg tca gga aca ggt	3384
	Ala Phe Ala Asn Phe Ser Glu Glu Leu Leu Val Ser Gly Thr Gly	
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1120	cct gct gat gga aaa tac gtt cgg ttg acc gtg gac tat agc aaa	3429
	Pro Ala Asp Gly Lys Tyr Val Arg Leu Thr Val Asp Tyr Ser Lys	
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1135	aaa cgt tta act gtt gac tcg gtg ttt aga cag cag ctc ggt cag	3474
	Lys Arg Leu Thr Val Asp Ser Val Phe Arg Gln Gln Leu Gly Gln	
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1150	aga ctc ggt tcg gtt ggt ttc ttc ttg gaa aga aac ttt ggc tgt	3519
	Arg Leu Gly Ser Val Gly Phe Phe Leu Glu Arg Asn Phe Gly Cys	
1160		
1165	gct caa gac gtt gaa ggt tgt ttg gtt ggt gaa gat gtt tac att	3564
	Ala Gln Asp Val Glu Gly Cys Leu Val Gly Glu Asp Val Tyr Ile	
1175		
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&lt;213&gt; Arabidopsis thaliana

&lt;400&gt; 2

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Arg Val Asn Leu Ser His Gln Ser His Arg Leu Arg Asn Ser Asn Ser  
 35 40 45

Arg Leu Thr Cys Thr Ala Thr Ser Ser Ser Thr Ile Glu Glu Gln Arg  
 50 55 60

Lys Lys Lys Asp Gly Ser Gly Thr Lys Val Arg Leu Asn Val Arg Leu  
 65 70 75 80

Asp His Gln Val Asn Phe Gly Asp His Val Ala Met Phe Gly Ser Ala  
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Lys Glu Ile Gly Ser Trp Lys Lys Lys Ser Pro Leu Asn Trp Ser Glu  
 100 105 110

Asn Gly Trp Val Cys Glu Leu Glu Leu Asp Gly Gly Gln Val Leu Glu  
 115 120 125

Tyr Lys Phe Val Ile Val Lys Asn Asp Gly Ser Leu Ser Trp Glu Ser  
 130 135 140

Gly Asp Asn Arg Val Leu Lys Val Pro Asn Ser Gly Asn Phe Ser Val  
 145 150 155 160

Val Cys His Trp Asp Ala Thr Arg Glu Thr Leu Asp Leu Pro Gln Glu  
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Val Gly Asn Asp Asp Asp Val Gly Asp Gly Gly His Glu Arg Asp Asn  
 180 185 190

His Asp Val Gly Asp Asp Arg Val Val Gly Ser Glu Asn Gly Ala Gln  
 195 200 205

Leu Gln Lys Ser Thr Leu Gly Gly Gln Trp Gln Gly Lys Asp Ala Ser  
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Phe Met Arg Ser Asn Asp His Gly Asn Arg Glu Val Gly Arg Asn Trp  
 225 230 235 240

Asp Thr Ser Gly Leu Glu Gly Thr Ala Leu Lys Met Val Glu Gly Asp  
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Arg Asn Ser Lys Asn Trp Trp Arg Lys Leu Glu Met Val Arg Glu Val  
 260 265 270

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 275 280 285

Ser Ala Ile Tyr Leu Lys Trp Ile Asn Thr Gly Gln Ile Pro Cys Phe  
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Glu Asp Gly Gly His His Arg Pro Asn Arg His Ala Glu Ile Ser Arg  
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Leu Ile Phe Arg Glu Leu Glu His Ile Cys Ser Lys Lys Asp Ala Thr  
 325 330 335

Pro Glu Glu Val Leu Val Ala Arg Lys Ile His Pro Cys Leu Pro Ser  
 340 345 350

Phe Lys Ala Glu Phe Thr Ala Ala Val Pro Leu Thr Arg Ile Arg Asp

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 355 360 365

Ile Ala His Arg Asn Asp Ile Pro His Asp Leu Lys Gln Glu Ile Lys  
 370 375 380

His Thr Ile Gln Asn Lys Leu His Arg Asn Ala Gly Pro Glu Asp Leu  
 385 390 395 400

Ile Ala Thr Glu Ala Met Leu Gln Arg Ile Thr Glu Thr Pro Gly Lys  
 405 410 415

Tyr Ser Gly Asp Phe Val Glu Gln Phe Lys Ile Phe His Asn Glu Leu  
 420 425 430

Lys Asp Phe Phe Asn Ala Gly Ser Leu Thr Glu Gln Leu Asp Ser Met  
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Lys Ile Ser Met Asp Asp Arg Gly Leu Ser Ala Leu Asn Leu Phe Phe  
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Glu Cys Lys Lys Arg Leu Asp Thr Ser Gly Glu Ser Ser Asn Val Leu  
 465 470 475 480

Glu Leu Ile Lys Thr Met His Ser Leu Ala Ser Leu Arg Glu Thr Ile  
 485 490 495

Ile Lys Glu Leu Asn Ser Gly Leu Arg Asn Asp Ala Pro Asp Thr Ala  
 500 505 510

Ile Ala Met Arg Gln Lys Trp Arg Leu Cys Glu Ile Gly Leu Glu Asp  
 515 520 525

Tyr Phe Phe Val Leu Leu Ser Arg Phe Leu Asn Ala Leu Glu Thr Met  
 530 535 540

Gly Gly Ala Asp Gln Leu Ala Lys Asp Val Gly Ser Arg Asn Val Ala  
 545 550 555 560

Ser Trp Asn Asp Pro Leu Asp Ala Leu Val Leu Gly Val His Gln Val  
 565 570 575

Gly Leu Ser Gly Trp Lys Gln Glu Glu Cys Leu Ala Ile Gly Asn Glu  
 580 585 590

Leu Leu Ala Trp Arg Glu Arg Asp Leu Leu Glu Lys Glu Gly Glu Glu  
 595 600 605

Asp Gly Lys Thr Ile Trp Ala Met Arg Leu Lys Ala Thr Leu Asp Arg  
 610 615 620

Ala Arg Arg Leu Thr Ala Glu Tyr Ser Asp Leu Leu Leu Gln Ile Phe  
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Pro Pro Asn Val Glu Ile Leu Gly Lys Ala Leu Gly Ile Pro Glu Asn  
 645 650 655

Ser Val Lys Thr Tyr Thr Glu Ala Glu Ile Arg Ala Gly Ile Ile Phe  
 660 665 670

Gln Ile Ser Lys Leu Cys Thr Val Leu Leu Lys Ala Val Arg Asn Ser  
 675 680 685

Leu Gly Ser Glu Gly Trp Asp Val Val Val Pro Gly Ser Thr Ser Gly  
 690 695 700

Thr Leu Val Gln Val Glu Ser Ile Val Pro Gly Ser Leu Pro Ala Thr  
 705 710 715 720

Ser Gly Gly Pro Ile Ile Leu Leu Val Asn Lys Ala Asp Gly Asp Glu  
 725 730 735

Glu Val Ser Ala Ala Asn Gly Asn Ile Ala Gly Val Met Leu Leu Gln  
 740 745 750

Glu Leu Pro His Leu Ser His Leu Gly Val Arg Ala Arg Gln Glu Lys  
 755 760 765

Ile Val Phe Val Thr Cys Asp Asp Asp Asp Lys Val Ala Asp Ile Arg  
 770 775 780

Arg Leu Val Gly Lys Phe Val Arg Leu Glu Ala Ser Pro Ser His Val  
 785 790 795 800

Asn Leu Ile Leu Ser Thr Glu Gly Arg Ser Arg Thr Ser Lys Ser Ser  
 805 810 815

Ala Thr Lys Lys Thr Asp Lys Asn Ser Leu Ser Lys Lys Lys Thr Asp  
 820 825 830

Lys Lys Ser Leu Ser Ile Asp Asp Glu Glu Ser Lys Pro Gly Ser Ser  
 835 840 845

Ser Ser Asn Ser Leu Leu Tyr Ser Ser Lys Asp Ile Pro Ser Gly Gly  
 850 855 860

Ile Ile Ala Leu Ala Asp Ala Asp Val Pro Thr Ser Gly Ser Lys Ser  
 865 870 875 880

Ala Ala Cys Gly Leu Leu Ala Ser Leu Ala Glu Ala Ser Ser Lys Val  
 885 890 895

His Ser Glu His Gly Val Pro Ala Ser Phe Lys Val Pro Thr Gly Val

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 900 905 910

Val Ile Pro Phe Gly Ser Met Glu Leu Ala Leu Lys Gln Asn Asn Ser  
 915 920 925

Glu Glu Lys Phe Ala Ser Leu Leu Glu Lys Leu Glu Thr Ala Arg Pro  
 930 935 940

Glu Gly Gly Glu Leu Asp Asp Ile Cys Asp Gln Ile His Glu Val Met  
 945 950 955 960

Lys Thr Leu Gln Val Pro Lys Glu Thr Ile Asn Ser Ile Ser Lys Ala  
 965 970 975

Phe Leu Lys Asp Ala Arg Leu Ile Val Arg Ser Ser Ala Asn Val Glu  
 980 985 990

Asp Leu Ala Gly Met Ser Ala Ala Gly Leu Tyr Glu Ser Ile Pro Asn  
 995 1000 1005

Val Ser Pro Ser Asp Pro Leu Val Phe Ser Asp Ser Val Cys Gln  
 1010 1015 1020

Val Trp Ala Ser Leu Tyr Thr Arg Arg Ala Val Leu Ser Arg Arg  
 1025 1030 1035

Ala Ala Gly Val Ser Gln Arg Glu Ala Ser Met Ala Val Leu Val  
 1040 1045 1050

Gln Glu Met Leu Ser Pro Asp Leu Ser Phe Val Leu His Thr Val  
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Ser Pro Ala Asp Pro Asp Ser Asn Leu Val Glu Ala Glu Ile Ala  
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Pro Gly Leu Gly Glu Thr Leu Ala Ser Gly Thr Arg Gly Thr Pro  
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Trp Arg Leu Ala Ser Gly Lys Leu Asp Gly Ile Val Gln Thr Leu  
 1100 1105 1110

Ala Phe Ala Asn Phe Ser Glu Glu Leu Leu Val Ser Gly Thr Gly  
 1115 1120 1125

Pro Ala Asp Gly Lys Tyr Val Arg Leu Thr Val Asp Tyr Ser Lys  
 1130 1135 1140

Lys Arg Leu Thr Val Asp Ser Val Phe Arg Gln Gln Leu Gly Gln  
 1145 1150 1155

Arg Leu Gly Ser Val Gly Phe Phe Leu Glu Arg Asn Phe Gly Cys  
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 1160 1165 1170

Ala Gln Asp Val Glu Gly Cys Leu Val Gly Glu Asp Val Tyr Ile  
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Val Gln Ser Arg Pro Gln Pro Leu  
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<213> Oryza sativa

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<221> CDS

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ggc ggc agg ccg cgc cgt ggt ctc gtc ctc ccg ccg ccc gga gtc ggt	99
Gly Gly Arg Pro Arg Arg Gly Leu Val Leu Pro Pro Pro Gly Val Gly	
15 20 25	
gcg ggt gtg ctg ctc cgc cgg gga gcg atg gcg ctc cct ggg cgg cgc	147
Ala Gly Val Leu Leu Arg Arg Gly Ala Met Ala Leu Pro Gly Arg Arg	
30 35 40 45	
ggc ttc gcg tgc cgc ggg aga tcc gcg gcc tcg gcg gca gag aga aca	195
Gly Phe Ala Cys Arg Gly Arg Ser Ala Ala Ser Ala Ala Glu Arg Thr	
50 55 60	
aag gag aaa aag aga aga gat tct tca aag cag cca ttg gtg cat ctc	243
Lys Glu Lys Lys Arg Arg Asp Ser Ser Lys Gln Pro Leu Val His Leu	
65 70 75	
cag gtt tgt cta gag cac cag gtt aag ttt ggt gag cat gta ggc att	291
Gln Val Cys Leu Glu His Gln Val Lys Phe Gly Glu His Val Gly Ile	
80 85 90	
atc ggt tcc aca aag gag ctt ggt tca tgg gag gag cag gtt gaa ctg	339
Ile Gly Ser Thr Lys Glu Leu Gly Ser Trp Glu Glu Gln Val Glu Leu	
95 100 105	
gaa tgg act aca aat ggt tgg gtc tgc cag ctt aag ctc cct gga gaa	387
Glu Trp Thr Thr Asn Gly Trp Val Cys Gln Leu Lys Leu Pro Gly Glu	
110 115 120 125	
aca ctt gtg gag ttt aaa ttt gtt ata ttt ttg gtg gga gga aaa gat	435
Thr Leu Val Glu Phe Lys Phe Val Ile Phe Leu Val Gly Gly Lys Asp	
130 135 140	

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aaa	ata	tgg	gaa	gat	ggt	aat	aac	cgt	ggt	ggt	gag	ctg	ccg	aag	gat		483
Lys	Ile	Trp	Glu	Asp	Gly	Asn	Asn	Arg	Val	Val	Glu	Leu	Pro	Lys	Asp		
			145					150					155				
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Gly	Lys	Phe	Asp	Ile	Val	Cys	His	Trp	Asn	Arg	Thr	Glu	Glu	Pro	Leu		
		160					165					170					
gaa	ctt	tta	gga	aca	cca	aag	ttt	gag	ttg	gtc	gga	gaa	gct	gaa	aag		579
Glu	Leu	Leu	Gly	Thr	Pro	Lys	Phe	Glu	Leu	Val	Gly	Glu	Ala	Glu	Lys		
	175					180					185						
aat	act	ggc	gag	gat	gct	tca	gca	tct	gta	act	ttt	gca	cct	gaa	aaa		627
Asn	Thr	Gly	Glu	Asp	Ala	Ser	Ala	Ser	Val	Thr	Phe	Ala	Pro	Glu	Lys		
190					195					200					205		
ggt	caa	gat	att	tca	ggt	ggt	gag	aat	ggt	gat	cca	gca	cca	gag	gcc		675
Val	Gln	Asp	Ile	Ser	Val	Val	Glu	Asn	Gly	Asp	Pro	Ala	Pro	Glu	Ala		
				210					215					220			
gag	tca	agc	aaa	ttt	ggt	ggg	caa	tgg	caa	gga	agt	aaa	act	ggt	ttc		723
Glu	Ser	Ser	Lys	Phe	Gly	Gly	Gln	Trp	Gln	Gly	Ser	Lys	Thr	Val	Phe		
			225					230					235				
atg	aga	tca	aat	gag	cat	ctg	aat	aag	gag	gct	gat	agg	atg	tgg	gat		771
Met	Arg	Ser	Asn	Glu	His	Leu	Asn	Lys	Glu	Ala	Asp	Arg	Met	Trp	Asp		
		240					245					250					
aca	act	ggg	ctt	gat	gga	ata	gca	ctg	aaa	ctg	gtg	gag	ggc	gat	aaa		819
Thr	Thr	Gly	Leu	Asp	Gly	Ile	Ala	Leu	Lys	Leu	Val	Glu	Gly	Asp	Lys		
	255					260					265						
gca	tcc	agg	aac	tgg	tgg	cgg	aag	tta	gag	ggt	ggt	cgc	ggg	ata	ttg		867
Ala	Ser	Arg	Asn	Trp	Trp	Arg	Lys	Leu	Glu	Val	Val	Arg	Gly	Ile	Leu		
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tca	gaa	tct	ttt	gat	gac	cag	agt	cgt	ctg	ggg	gcc	ctt	gta	tac	tca		915
Ser	Glu	Ser	Phe	Asp	Asp	Gln	Ser	Arg	Leu	Gly	Ala	Leu	Val	Tyr	Ser		
				290					295					300			
gct	att	tat	ctg	aag	tgg	att	tat	aca	ggt	cag	ata	tcg	tgc	ttt	gaa		963
Ala	Ile	Tyr	Leu	Lys	Trp	Ile	Tyr	Thr	Gly	Gln	Ile	Ser	Cys	Phe	Glu		
			305					310					315				
gat	ggt	ggc	cac	cat	cgg	cct	aac	aaa	cat	gct	gag	ata	tcg	agg	caa		1011
Asp	Gly	Gly	His	His	Arg	Pro	Asn	Lys	His	Ala	Glu	Ile	Ser	Arg	Gln		
		320					325					330					
ata	ttc	cgt	gaa	ctt	gaa	atg	atg	tat	tat	ggg	aaa	acc	aca	tca	gcc		1059
Ile	Phe	Arg	Glu	Leu	Glu	Met	Met	Tyr	Tyr	Gly	Lys	Thr	Thr	Ser	Ala		
	335					340					345						
aag	gat	ggt	ctc	gtg	att	cgc	aaa	att	cat	ccc	ttt	tta	cct	tca	ttt		1107
Lys	Asp	Val	Leu	Val	Ile	Arg	Lys	Ile	His	Pro	Phe	Leu	Pro	Ser	Phe		
350					355					360					365		
aag	tca	gag	ttt	aca	gcc	tct	gtc	cct	cta	aca	cga	att	cgt	gat	att		1155
Lys	Ser	Glu	Phe	Thr	Ala	Ser	Val	Pro	Leu	Thr	Arg	Ile	Arg	Asp	Ile		
				370				375						380			
gct	cac	cgg	aat	gac	atc	cca	cat	gat	ctc	aag	caa	gaa	atc	aag	cat		1203
Ala	His	Arg	Asn	Asp	Ile	Pro	His	Asp	Leu	Lys	Gln	Glu	Ile	Lys	His		
			385					390					395				
act	ata	caa	aac	aaa	ctt	cat	cgt	aat	gct	gga	cct	gag	gat	ctt	att		1251
Thr	Ile	Gln	Asn	Lys	Leu	His	Arg	Asn	Ala	Gly	Pro	Glu	Asp	Leu	Ile		
		400					405					410					

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gct Ala 415	aca Thr	gaa Glu	gtc Val	atg Met	ctt Leu	gct Ala 420	agg Arg	att Ile	act Thr	aag Lys	acc Thr 425	cct Pro	gga Gly	gaa Glu	tac Tyr	1299	
agt Ser 430	gaa Glu	aca Thr	ttt Phe	gtt Val	gaa Glu 435	caa Gln	ttc Phe	acg Thr	ata Ile	ttt Phe 440	tat Tyr	agc Ser	gaa Glu	cta Leu	aaa Lys 445	1347	
gat Asp	ttc Phe	ttc Phe	aat Asn	gct Ala 450	ggc Gly	agc Ser	cta Leu	ttt Phe	gag Glu 455	caa Gln	ctg Leu	gag Glu	tcc Ser	atc Ile 460	aag Lys	1395	
gaa Glu	tct Ser	ctg Leu	aac Asn 465	gag Glu	tca Ser	ggc Gly	tta Leu	gaa Glu 470	gtt Val	ctc Leu	tca Ser	tcc Ser	ttt Phe 475	gtg Val	gaa Glu	1443	
acc Thr	aaa Lys	agg Arg 480	agt Ser	ttg Leu	gac Asp	caa Gln	gtg Val 485	gat Asp	cat His	gca Ala	gaa Glu	gat Asp 490	ttg Leu	gat Asp	aaa Lys	1491	
aat Asn 495	gat Asp	acc Thr	att Ile	caa Gln	att Ile	ttg Leu 500	atg Met	act Thr	acc Thr	ttg Leu	caa Gln 505	tca Ser	tta Leu	tct Ser	tct Ser	1539	
cta Leu 510	aga Arg	tcg Ser	gtt Val	cta Leu	atg Met 515	aag Lys	ggc Gly	ctt Leu	gaa Glu	agt Ser 520	ggc Gly	ctt Leu	aga Arg	aat Asn	gat Asp 525	1587	
gcg Ala	cct Pro	gat Asp	aat Asn	gct Ala 530	ata Ile	gca Ala	atg Met	cga Arg	caa Gln 535	aag Lys	tgg Trp	cgc Arg	ctt Leu	tgt Cys 540	gaa Glu	1635	
att Ile	agt Ser	ctt Leu	gag Glu 545	gat Asp	tat Tyr	tca Ser	ttt Phe	gtt Val 550	ctg Leu	tta Leu	agc Ser	aga Arg	ttc Phe 555	atc Ile	aat Asn	1683	
act Thr	ctt Leu	gaa Glu 560	gcc Ala	tta Leu	ggg Gly	gga Gly	tca Ser 565	gct Ala	tca Ser	ctt Leu	gca Ala	aag Lys 570	gat Asp	gta Val	gct Ala	1731	
aga Arg	aat Asn 575	act Thr	act Thr	cta Leu	tgg Trp	gat Asp 580	act Thr	act Thr	ctt Leu	gat Asp	gcc Ala 585	ctt Leu	gtc Val	att Ile	ggc Gly	1779	
atc Ile 590	aat Asn	caa Gln	gtt Val	agc Ser	ttt Phe 595	tca Ser	ggg Gly	tgg Trp	aaa Lys	aca Thr 600	gat Asp	gaa Glu	tgt Cys	att Ile	gcc Ala 605	1827	
ata Ile	ggg Gly	aat Asn	gag Glu	att Ile 610	ctt Leu	tcc Ser	tgg Trp	aag Lys	caa Gln 615	aaa Lys	ggg Gly	cta Leu	tct Ser	gaa Glu 620	agt Ser	1875	
gaa Glu	ggg Gly	tgt Cys	gaa Glu 625	gat Asp	ggg Gly	aaa Lys	tat Tyr	att Ile 630	tgg Trp	tca Ser	cta Leu	aga Arg	ctt Leu 635	aaa Lys	gct Ala	1923	
aca Thr	ctg Leu	gac Asp 640	aga Arg	gca Ala	cgg Arg	aga Arg	tta Leu 645	acg Thr	gaa Glu	gag Glu	tac Tyr	tct Ser 650	gaa Glu	gca Ala	ctt Leu	1971	
ctt Leu	tct Ser 655	ata Ile	ttc Phe	cct Pro	gaa Glu	aaa Lys 660	gta Val	atg Met	gtt Val	att Ile	ggg Gly 665	aaa Lys	gcc Ala	ctt Leu	gga Gly	2019	
ata Ile 670	cca Pro	gat Asp	aac Asn	agt Ser	gtg Val 675	aga Arg	act Thr	tac Tyr	aca Thr	gag Glu 680	gca Ala	gaa Glu	att Ile	cgt Arg	gct Ala 685	2067	

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ggc att gtt ttt cag gta tct aaa cta tgc aca gta ctt cag aaa gca	Gly Ile Val Phe Gln Val Ser Lys Leu Cys Thr Val Leu Gln Lys Ala	690						695									2115
att cga gaa gta ctt gga tca act ggc tgg gat gtt ctt gtt cct gga	Ile Arg Glu Val Leu Gly Ser Thr Gly Trp Asp Val Leu Val Pro Gly	705					710					715					2163
gtg gcc cat gga act ctg atg cgg gtg gaa aga att ctt cct gga tca	Val Ala His Gly Thr Leu Met Arg Val Glu Arg Ile Leu Pro Gly Ser	720					725					730					2211
tta cct tca tct gtc aaa gaa cct gtg gtt cta att gta gat aag gct	Leu Pro Ser Ser Val Lys Glu Pro Val Val Leu Ile Val Asp Lys Ala	735					740					745					2259
gat gga gat gaa gag gtc aaa gct gct ggg gat aat ata gtt ggt gtt	Asp Gly Asp Glu Glu Val Lys Ala Ala Gly Asp Asn Ile Val Gly Val	750				755				760						765	2307
att ctt ctt cag gaa cta cct cac ctt tca cat ctt ggt gtt aga gct	Ile Leu Leu Gln Glu Leu Pro His Leu Ser His Leu Gly Val Arg Ala	770					775									780	2355
cgt caa gag aat gtt gta ttt gta act tgt gaa tat gat gac aca gtt	Arg Gln Glu Asn Val Val Phe Val Thr Cys Glu Tyr Asp Asp Thr Val	785					790										2403
aca gat gtg tat ttg ctt gag gga aaa tat atc aga tta gaa gca tca	Thr Asp Val Tyr Leu Leu Glu Gly Lys Tyr Ile Arg Leu Glu Ala Ser	800					805					810					2451
tcc atc aat gtc aat ctc tca ata gtt tca gaa aaa aat gac aat gct	Ser Ile Asn Val Asn Leu Ser Ile Val Ser Glu Lys Asn Asp Asn Ala	815				820						825					2499
gtc tct aca gaa cca aat agt aca ggg aat cca ttt caa cag aaa ctc	Val Ser Thr Glu Pro Asn Ser Thr Gly Asn Pro Phe Gln Gln Lys Leu	830				835				840						845	2547
caa aat gaa ttc tct cta cca tcg gat atc gag atg cca ctg caa atg	Gln Asn Glu Phe Ser Leu Pro Ser Asp Ile Glu Met Pro Leu Gln Met	850						855								860	2595
tct aag caa aaa agc aaa tca gga gtg aat ggt agt ttt gct gct ctt	Ser Lys Gln Lys Ser Lys Ser Gly Val Asn Gly Ser Phe Ala Ala Leu	865					870										2643
gag ctt tca gaa gct tca gtg gaa tca gct ggt gca aaa gct gct gca	Glu Leu Ser Glu Ala Ser Val Glu Ser Ala Gly Ala Lys Ala Ala Ala	880					885					890					2691
tgc aga act ctt tct gtt ctt gct tca ttg tct aat aaa gtc tat agt	Cys Arg Thr Leu Ser Val Leu Ala Ser Leu Ser Asn Lys Val Tyr Ser	895				900						905					2739
gat caa gga gtt cca gca gcc ttt aga gtc cct tct ggt gct gtg ata	Asp Gln Gly Val Pro Ala Ala Phe Arg Val Pro Ser Gly Ala Val Ile	910				915						920				925	2787
cca ttt gga tca atg gag gat gcg ctc aag aaa agt gga tca ctg gaa	Pro Phe Gly Ser Met Glu Asp Ala Leu Lys Lys Ser Gly Ser Leu Glu	930						935								940	2835
tcc ttt aca agc ctt cta gaa aag att gaa aca gcc aaa gtc gaa aat	Ser Phe Thr Ser Leu Leu Glu Lys Ile Glu Thr Ala Lys Val Glu Asn	945						950								955	2883

BCS 04-5003-PCT_Erhöhte Akt. OK1 & R1_SEQUENZPROTOKOLL.ST25																
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Gly	Glu	Val	Asp	Ser	Leu	Ala	Leu	Glu	Leu	Gln	Ala	Ile	Ile	Ser	His	
		960					965					970				
ctt	tcc	cca	ccg	gag	gag	act	att	ata	ttt	ctc	aaa	aga	atc	ttc	cca	2979
Leu	Ser	Pro	Pro	Glu	Glu	Thr	Ile	Ile	Phe	Leu	Lys	Arg	Ile	Phe	Pro	
	975					980					985					
cag	gat	gtc	cgg	ttg	att	gtt	aga	tct	agt	gct	aat	gtg	gag	gat	ttg	3027
Gln	Asp	Val	Arg	Leu	Ile	Val	Arg	Ser	Ser	Ala	Asn	Val	Glu	Asp	Leu	
990					995					1000					1005	
gct	ggt	atg	tca	gct	gct	ggt	ctc	tat	gat	tca	att	ccc	aat	gtc		3072
Ala	Gly	Met	Ser	Ala	Ala	Gly	Leu	Tyr	Asp	Ser	Ile	Pro	Asn	Val		
				1010					1015					1020		
agt	ctc	atg	gac	cca	tgt	gcc	ttt	gga	gct	gcg	gtt	ggg	aag	gtt		3117
Ser	Leu	Met	Asp	Pro	Cys	Ala	Phe	Gly	Ala	Ala	Val	Gly	Lys	Val		
				1025					1030					1035		
tgg	gct	tct	tta	tac	aca	agg	aga	gcc	atc	cta	agc	cgt	cga	gcc		3162
Trp	Ala	Ser	Leu	Tyr	Thr	Arg	Arg	Ala	Ile	Leu	Ser	Arg	Arg	Ala		
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gct	ggt	gtt	tat	cag	aga	gac	gcg	aca	atg	gct	gtt	ctt	gtc	caa		3207
Ala	Gly	Val	Tyr	Gln	Arg	Asp	Ala	Thr	Met	Ala	Val	Leu	Val	Gln		
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gaa	ata	ctg	cag	cca	gat	ctc	tcc	ttc	gtg	ctt	cat	act	gtt	tgc		3252
Glu	Ile	Leu	Gln	Pro	Asp	Leu	Ser	Phe	Val	Leu	His	Thr	Val	Cys		
				1070					1075					1080		
ccc	gct	gac	cat	gac	ccc	aag	gtt	gtc	cag	gct	gag	gtc	gcc	cct		3297
Pro	Ala	Asp	His	Asp	Pro	Lys	Val	Val	Gln	Ala	Glu	Val	Ala	Pro		
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ggg	ctg	ggt	gaa	acg	ctt	gct	tca	gga	acc	cgt	ggc	acc	ccg	tgg		3342
Gly	Leu	Gly	Glu	Thr	Leu	Ala	Ser	Gly	Thr	Arg	Gly	Thr	Pro	Trp		
				1100					1105					1110		
agg	ctg	tca	tgt	aac	aaa	ttc	gat	gga	aaa	gtt	gcc	act	ctt	gcc		3387
Arg	Leu	Ser	Cys	Asn	Lys	Phe	Asp	Gly	Lys	Val	Ala	Thr	Leu	Ala		
				1115					1120					1125		
ttt	tca	aat	ttc	agt	gag	gag	atg	gtg	gtg	cac	aac	tct	ggt	cct		3432
Phe	Ser	Asn	Phe	Ser	Glu	Glu	Met	Val	Val	His	Asn	Ser	Gly	Pro		
				1130					1135					1140		
gcc	aat	gga	gaa	gta	att	cgt	ctt	act	gtt	gat	tac	agc	aag	aag		3477
Ala	Asn	Gly	Glu	Val	Ile	Arg	Leu	Thr	Val	Asp	Tyr	Ser	Lys	Lys		
				1145					1150					1155		
cca	ttg	tcg	gtt	gat	aca	acc	ttt	agg	aag	cag	ttt	ggt	cag	cga		3522
Pro	Leu	Ser	Val	Asp	Thr	Thr	Phe	Arg	Lys	Gln	Phe	Gly	Gln	Arg		
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ctg	gct	gcg	att	ggc	cag	tat	ctg	gag	cag	aag	ttc	ggg	agt	gca		3567
Leu	Ala	Ala	Ile	Gly	Gln	Tyr	Leu	Glu	Gln	Lys	Phe	Gly	Ser	Ala		
				1175					1180					1185		
cag	gat	gtg	gaa	ggt	tgc	ctg	gtt	ggg	aaa	gat	att	ttt	ata	gtg		3612
Gln	Asp	Val	Glu	Gly	Cys	Leu	Val	Gly	Lys	Asp	Ile	Phe	Ile	Val		
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caa	agc	agg	cca	cag	cca	tag	aagccgaatt	c								3644
Gln	Ser	Arg	Pro	Gln	Pro											
				1205												

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&lt;211&gt; 1206

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&lt;213&gt; Oryza sativa

&lt;400&gt; 4

Met Thr Ser Leu Arg Pro Leu Glu Thr Ser Leu Ser Ile Gly Gly Arg  
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Pro Arg Arg Gly Leu Val Leu Pro Pro Pro Gly Val Gly Ala Gly Val  
 20 25 30

Leu Leu Arg Arg Gly Ala Met Ala Leu Pro Gly Arg Arg Gly Phe Ala  
 35 40 45

Cys Arg Gly Arg Ser Ala Ala Ser Ala Ala Glu Arg Thr Lys Glu Lys  
 50 55 60

Lys Arg Arg Asp Ser Ser Lys Gln Pro Leu Val His Leu Gln Val Cys  
 65 70 75 80

Leu Glu His Gln Val Lys Phe Gly Glu His Val Gly Ile Ile Gly Ser  
 85 90 95

Thr Lys Glu Leu Gly Ser Trp Glu Glu Gln Val Glu Leu Glu Trp Thr  
 100 105 110

Thr Asn Gly Trp Val Cys Gln Leu Lys Leu Pro Gly Glu Thr Leu Val  
 115 120 125

Glu Phe Lys Phe Val Ile Phe Leu Val Gly Gly Lys Asp Lys Ile Trp  
 130 135 140

Glu Asp Gly Asn Asn Arg Val Val Glu Leu Pro Lys Asp Gly Lys Phe  
 145 150 155 160

Asp Ile Val Cys His Trp Asn Arg Thr Glu Glu Pro Leu Glu Leu Leu  
 165 170 175

Gly Thr Pro Lys Phe Glu Leu Val Gly Glu Ala Glu Lys Asn Thr Gly  
 180 185 190

Glu Asp Ala Ser Ala Ser Val Thr Phe Ala Pro Glu Lys Val Gln Asp  
 195 200 205

Ile Ser Val Val Glu Asn Gly Asp Pro Ala Pro Glu Ala Glu Ser Ser  
 210 215 220



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Lys Phe Gly Gly Gln Trp Gln Gly Ser Lys Thr Val Phe Met Arg Ser  
 225 230 235 240

Asn Glu His Leu Asn Lys Glu Ala Asp Arg Met Trp Asp Thr Thr Gly  
 245 250 255

Leu Asp Gly Ile Ala Leu Lys Leu Val Glu Gly Asp Lys Ala Ser Arg  
 260 265 270

Asn Trp Trp Arg Lys Leu Glu Val Val Arg Gly Ile Leu Ser Glu Ser  
 275 280 285

Phe Asp Asp Gln Ser Arg Leu Gly Ala Leu Val Tyr Ser Ala Ile Tyr  
 290 295 300

Leu Lys Trp Ile Tyr Thr Gly Gln Ile Ser Cys Phe Glu Asp Gly Gly  
 305 310 315 320

His His Arg Pro Asn Lys His Ala Glu Ile Ser Arg Gln Ile Phe Arg  
 325 330 335

Glu Leu Glu Met Met Tyr Tyr Gly Lys Thr Thr Ser Ala Lys Asp Val  
 340 345 350

Leu Val Ile Arg Lys Ile His Pro Phe Leu Pro Ser Phe Lys Ser Glu  
 355 360 365

Phe Thr Ala Ser Val Pro Leu Thr Arg Ile Arg Asp Ile Ala His Arg  
 370 375 380

Asn Asp Ile Pro His Asp Leu Lys Gln Glu Ile Lys His Thr Ile Gln  
 385 390 395 400

Asn Lys Leu His Arg Asn Ala Gly Pro Glu Asp Leu Ile Ala Thr Glu  
 405 410 415

Val Met Leu Ala Arg Ile Thr Lys Thr Pro Gly Glu Tyr Ser Glu Thr  
 420 425 430

Phe Val Glu Gln Phe Thr Ile Phe Tyr Ser Glu Leu Lys Asp Phe Phe  
 435 440 445

Asn Ala Gly Ser Leu Phe Glu Gln Leu Glu Ser Ile Lys Glu Ser Leu  
 450 455 460

Asn Glu Ser Gly Leu Glu Val Leu Ser Ser Phe Val Glu Thr Lys Arg  
 465 470 475 480

Ser Leu Asp Gln Val Asp His Ala Glu Asp Leu Asp Lys Asn Asp Thr  
 485 490 495

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Ile Gln Ile Leu Met Thr Thr Leu Gln Ser Leu Ser Ser Leu Arg Ser  
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 Val Leu Met Lys Gly Leu Glu Ser Gly Leu Arg Asn Asp Ala Pro Asp  
 515 520 525  
 Asn Ala Ile Ala Met Arg Gln Lys Trp Arg Leu Cys Glu Ile Ser Leu  
 530 535 540  
 Glu Asp Tyr Ser Phe Val Leu Leu Ser Arg Phe Ile Asn Thr Leu Glu  
 545 550 555 560  
 Ala Leu Gly Gly Ser Ala Ser Leu Ala Lys Asp Val Ala Arg Asn Thr  
 565 570 575  
 Thr Leu Trp Asp Thr Thr Leu Asp Ala Leu Val Ile Gly Ile Asn Gln  
 580 585 590  
 Val Ser Phe Ser Gly Trp Lys Thr Asp Glu Cys Ile Ala Ile Gly Asn  
 595 600 605  
 Glu Ile Leu Ser Trp Lys Gln Lys Gly Leu Ser Glu Ser Glu Gly Cys  
 610 615 620  
 Glu Asp Gly Lys Tyr Ile Trp Ser Leu Arg Leu Lys Ala Thr Leu Asp  
 625 630 635 640  
 Arg Ala Arg Arg Leu Thr Glu Glu Tyr Ser Glu Ala Leu Leu Ser Ile  
 645 650 655  
 Phe Pro Glu Lys Val Met Val Ile Gly Lys Ala Leu Gly Ile Pro Asp  
 660 665 670  
 Asn Ser Val Arg Thr Tyr Thr Glu Ala Glu Ile Arg Ala Gly Ile Val  
 675 680 685  
 Phe Gln Val Ser Lys Leu Cys Thr Val Leu Gln Lys Ala Ile Arg Glu  
 690 695 700  
 Val Leu Gly Ser Thr Gly Trp Asp Val Leu Val Pro Gly Val Ala His  
 705 710 715 720  
 Gly Thr Leu Met Arg Val Glu Arg Ile Leu Pro Gly Ser Leu Pro Ser  
 725 730 735  
 Ser Val Lys Glu Pro Val Val Leu Ile Val Asp Lys Ala Asp Gly Asp  
 740 745 750  
 Glu Glu Val Lys Ala Ala Gly Asp Asn Ile Val Gly Val Ile Leu Leu  
 755 760 765

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Gln Glu Leu Pro His Leu Ser His Leu Gly Val Arg Ala Arg Gln Glu  
 770 775 780  
 Asn Val Val Phe Val Thr Cys Glu Tyr Asp Asp Thr Val Thr Asp Val  
 785 790 795 800  
 Tyr Leu Leu Glu Gly Lys Tyr Ile Arg Leu Glu Ala Ser Ser Ile Asn  
 805 810 815  
 Val Asn Leu Ser Ile Val Ser Glu Lys Asn Asp Asn Ala Val Ser Thr  
 820 825 830  
 Glu Pro Asn Ser Thr Gly Asn Pro Phe Gln Gln Lys Leu Gln Asn Glu  
 835 840 845  
 Phe Ser Leu Pro Ser Asp Ile Glu Met Pro Leu Gln Met Ser Lys Gln  
 850 855 860  
 Lys Ser Lys Ser Gly Val Asn Gly Ser Phe Ala Ala Leu Glu Leu Ser  
 865 870 875 880  
 Glu Ala Ser Val Glu Ser Ala Gly Ala Lys Ala Ala Ala Cys Arg Thr  
 885 890 895  
 Leu Ser Val Leu Ala Ser Leu Ser Asn Lys Val Tyr Ser Asp Gln Gly  
 900 905 910  
 Val Pro Ala Ala Phe Arg Val Pro Ser Gly Ala Val Ile Pro Phe Gly  
 915 920 925  
 Ser Met Glu Asp Ala Leu Lys Lys Ser Gly Ser Leu Glu Ser Phe Thr  
 930 935 940  
 Ser Leu Leu Glu Lys Ile Glu Thr Ala Lys Val Glu Asn Gly Glu Val  
 945 950 955 960  
 Asp Ser Leu Ala Leu Glu Leu Gln Ala Ile Ile Ser His Leu Ser Pro  
 965 970 975  
 Pro Glu Glu Thr Ile Ile Phe Leu Lys Arg Ile Phe Pro Gln Asp Val  
 980 985 990  
 Arg Leu Ile Val Arg Ser Ser Ala Asn Val Glu Asp Leu Ala Gly Met  
 995 1000 1005  
 Ser Ala Ala Gly Leu Tyr Asp Ser Ile Pro Asn Val Ser Leu Met  
 1010 1015 1020  
 Asp Pro Cys Ala Phe Gly Ala Ala Val Gly Lys Val Trp Ala Ser  
 1025 1030 1035

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Leu Tyr Thr Arg Arg Ala Ile Leu Ser Arg Arg Ala Ala Gly Val  
 1040 1045 1050  
 Tyr Gln Arg Asp Ala Thr Met Ala Val Leu Val Gln Glu Ile Leu  
 1055 1060 1065  
 Gln Pro Asp Leu Ser Phe Val Leu His Thr Val Cys Pro Ala Asp  
 1070 1075 1080  
 His Asp Pro Lys Val Val Gln Ala Glu Val Ala Pro Gly Leu Gly  
 1085 1090 1095  
 Glu Thr Leu Ala Ser Gly Thr Arg Gly Thr Pro Trp Arg Leu Ser  
 1100 1105 1110  
 Cys Asn Lys Phe Asp Gly Lys Val Ala Thr Leu Ala Phe Ser Asn  
 1115 1120 1125  
 Phe Ser Glu Glu Met Val Val His Asn Ser Gly Pro Ala Asn Gly  
 1130 1135 1140  
 Glu Val Ile Arg Leu Thr Val Asp Tyr Ser Lys Lys Pro Leu Ser  
 1145 1150 1155  
 Val Asp Thr Thr Phe Arg Lys Gln Phe Gly Gln Arg Leu Ala Ala  
 1160 1165 1170  
 Ile Gly Gln Tyr Leu Glu Gln Lys Phe Gly Ser Ala Gln Asp Val  
 1175 1180 1185  
 Glu Gly Cys Leu Val Gly Lys Asp Ile Phe Ile Val Gln Ser Arg  
 1190 1195 1200  
 Pro Gln Pro  
 1205

&lt;210&gt; 5

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis thaliana, Oryza sativa

&lt;400&gt; 5

Leu Pro His Leu Ser His Leu Gly Val Arg Ala Arg  
 1 5 10

&lt;210&gt; 6

&lt;211&gt; 5124

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

&lt;212&gt; DNA

&lt;213&gt; Citrus reticulata

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (257)..(4684)

&lt;223&gt;

&lt;300&gt;

&lt;308&gt; EMBL / AY094062

&lt;309&gt; 2003-05-03

&lt;400&gt; 6

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gcacgagctc ttattacaag gtgccacgcg tcgtccgcga ctgagataaa tcgcaagtgt      60
cgctccagat tttagtactt gtttcttacg gactccgtga aaaaaaccaa aatcaaataa      120
tagcgaatag ccatagtcac attctcagct tcatcaatat ctctaccaag cagtatctct      180
tcgtatatatt accatccact tatcgtttca tgctccaatt actctgagct aagaagtgta      240
cttattgtag aggaat atg agc aat agc ata ggc cgt aat gta ctc cac cag      292
                Met Ser Asn Ser Ile Gly Arg Asn Val Leu His Gln
                1         5         10

agc ttg ctt tgt tca acg gtt ttt gag cat caa agc aac cgt cat tct      340
Ser Leu Leu Cys Ser Thr Val Phe Glu His Gln Ser Asn Arg His Ser
                15         20         25

tct ggc att cct gca aac tct ttg ttt caa gct gtc tct ata aat caa      388
Ser Gly Ile Pro Ala Asn Ser Leu Phe Gln Ala Val Ser Ile Asn Gln
                30         35         40

ccg gcg ggg gcg tcg gca gca cgc aag tcg cct tta tct acc aaa ttt      436
Pro Ala Gly Ala Ser Ala Ala Arg Lys Ser Pro Leu Ser Thr Lys Phe
                45         50         55         60

tac ggg acg agt ttg aat gct aga cca aag atg gcc atg gga agg cat      484
Tyr Gly Thr Ser Leu Asn Ala Arg Pro Lys Met Ala Met Gly Arg His
                65         70         75

cgc cct gtt ttg atc act cca cgt gct gta tta gcc gtg gat tca gct      532
Arg Pro Val Leu Ile Thr Pro Arg Ala Val Leu Ala Val Asp Ser Ala
                80         85         90

tct gag ctt gca gga aaa ttc aac ctt gaa ggg aat gtt gaa ttg cag      580
Ser Glu Leu Ala Gly Lys Phe Asn Leu Glu Gly Asn Val Glu Leu Gln
                95        100        105

att aca gtt ggt gct cca act cca ggg tct ttg aca caa gta aat att      628
Ile Thr Val Gly Ala Pro Thr Pro Gly Ser Leu Thr Gln Val Asn Ile
                110        115        120

gag atc tca tat agt agc aat tcc ttg ctt ctg cac tgg ggt gcg ata      676
Glu Ile Ser Tyr Ser Ser Asn Ser Leu Leu Leu His Trp Gly Ala Ile

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BCS 04-5003-PCT_Erhöhte Akt. OK1 & R1_SEQUENZPROTOKOLL.ST25																	
125	130					135					140						
cgt gac aaa aag gaa aag tgg gta ctt cct tct cgt ccg cca gat ggg	Arg	Asp	Lys	Lys	Glu	Lys	Trp	Val	Leu	Pro	Ser	Arg	Pro	Pro	Asp	Gly	724
				145					150						155		
acc aaa ata tta aag aat aga gcc ctt aga act ccc ttt gtg agc tct	Thr	Lys	Ile	Leu	Lys	Asn	Arg	Ala	Leu	Arg	Thr	Pro	Phe	Val	Ser	Ser	772
			160						165					170			
ggt tcc aaa tct ctc gtt aaa tta gag ata gat gat cct gca ata gaa	Gly	Ser	Lys	Ser	Leu	Val	Lys	Leu	Glu	Ile	Asp	Asp	Pro	Ala	Ile	Glu	820
			175					180					185				
gca gta gag ttt ctt ata ctc gat gaa gcc cag aat aaa tgg ttc aaa	Ala	Val	Glu	Phe	Leu	Ile	Leu	Asp	Glu	Ala	Gln	Asn	Lys	Trp	Phe	Lys	868
			190				195					200					
aac aat ggt gca aat ttt cat gta aag tta cca tca gag agg agt ttg	Asn	Asn	Gly	Ala	Asn	Phe	His	Val	Lys	Leu	Pro	Ser	Glu	Arg	Ser	Leu	916
			205			210					215					220	
att caa aat gtt tca gtt cct gaa gat ctt gta cag act caa gca tat	Ile	Gln	Asn	Val	Ser	Val	Pro	Glu	Asp	Leu	Val	Gln	Thr	Gln	Ala	Tyr	964
				225						230					235		
tta agg tgg gaa aga aag ggt aaa cag att tat act cct gaa caa gag	Leu	Arg	Trp	Glu	Arg	Lys	Gly	Lys	Gln	Ile	Tyr	Thr	Pro	Glu	Gln	Glu	1012
			240					245						250			
aag gag gag tat gaa gca gct cgc act gag ctg ctg gaa gaa att gtt	Lys	Glu	Glu	Tyr	Glu	Ala	Ala	Arg	Thr	Glu	Leu	Leu	Glu	Glu	Ile	Val	1060
			255					260					265				
aga ggt act tct gtg gag gac ctg cga gca aaa cta aca aac aaa aat	Arg	Gly	Thr	Ser	Val	Glu	Asp	Leu	Arg	Ala	Lys	Leu	Thr	Asn	Lys	Asn	1108
			270				275					280					
gat aga caa gaa att aag gaa tct tct tcc cat gga aca aaa aat gcg	Asp	Arg	Gln	Glu	Ile	Lys	Glu	Ser	Ser	Ser	His	Gly	Thr	Lys	Asn	Ala	1156
					290						295					300	
ata ccg gat gat ctt gtg caa ata caa tct tat ata cgg tgg gag aga	Ile	Pro	Asp	Asp	Leu	Val	Gln	Ile	Gln	Ser	Tyr	Ile	Arg	Trp	Glu	Arg	1204
				305						310					315		
gct ggg aag ccc aat tac tct gca gac caa cag ctt aga gaa ttt gag	Ala	Gly	Lys	Pro	Asn	Tyr	Ser	Ala	Asp	Gln	Gln	Leu	Arg	Glu	Phe	Glu	1252
			320					325						330			
gaa gca aga aaa gaa ttg caa tct gaa cta gag aag ggt atc tct ctt	Glu	Ala	Arg	Lys	Glu	Leu	Gln	Ser	Glu	Leu	Glu	Lys	Gly	Ile	Ser	Leu	1300
			335				340						345				
gat gaa ata tgg aaa aag att aca aaa ggg gag atc cag act aag gtc	Asp	Glu	Ile	Trp	Lys	Lys	Ile	Thr	Lys	Gly	Glu	Ile	Gln	Thr	Lys	Val	1348
			350				355					360					
tct gat caa ctt aaa act aaa aag tat ttt aga act gaa agg att cag	Ser	Asp	Gln	Leu	Lys	Thr	Lys	Lys	Tyr	Phe	Arg	Thr	Glu	Arg	Ile	Gln	1396
					370						375					380	
agg aag cag agg gac ttt atg cag att cta aac aaa cat gtg gct gaa	Arg	Lys	Gln	Arg	Asp	Phe	Met	Gln	Ile	Leu	Asn	Lys	His	Val	Ala	Glu	1444
				385						390					395		
ccc aca gag aag aag aat att tca gtt gaa cca aaa gcc ttg aca cca	Pro	Thr	Glu	Lys	Lys	Asn	Ile	Ser	Val	Glu	Pro	Lys	Ala	Leu	Thr	Pro	1492

gtt Val	gaa Glu	ctt Leu 415	ttc Phe	gtc Val	ggg Gly	gca Ala	act Thr 420	gaa Glu	gaa Glu	cag Gln	gag Glu	ggt Gly 425	gat Asp	tct Ser	att Ile	1540
ctt Leu	aac Asn 430	aag Lys	aag Lys	atc Ile	tac Tyr	aag Lys 435	ctt Leu	gct Ala	ggc Gly	aaa Lys	gaa Glu 440	ctt Leu	ctg Leu	gta Val	ctt Leu	1588
gtg Val 445	cac His	aag Lys	cct Pro	ggt Gly	ggc Gly 450	aag Lys	acc Thr	aaa Lys	att Ile	cac His 455	cta Leu	gct Ala	act Thr	gat Asp	ggc Gly 460	1636
aaa Lys	gag Glu	cca Pro	ctc Leu	att Ile 465	ctc Leu	cac His	tgg Trp	gct Ala	ttg Leu 470	tct Ser	aag Lys	aag Lys	gct Ala	gga Gly 475	gaa Glu	1684
tgg Trp	ttg Leu	gct Ala	ccg Pro 480	cct Pro	cca Pro	agt Ser	gta Val	ctg Leu 485	cct Pro	gca Ala	ggt Gly	tca Ser	gtt Val 490	ttg Leu	ctg Leu	1732
agt Ser	ggg Gly	tca Ser 495	gtt Val	gaa Glu	aca Thr	aca Thr	ttc Phe 500	aca Thr	act Thr	agc Ser	tct Ser	ctt Leu 505	gcg Ala	gat Asp	ctg Leu	1780
cct Pro	tat Tyr 510	cag Gln	gtc Val	caa Gln	tca Ser	att Ile 515	gaa Glu	ata Ile	gag Glu	att Ile	gaa Glu 520	gaa Glu	gaa Glu	ggt Gly	tat Tyr	1828
gtt Val 525	gga Gly	atg Met	cca Pro	tct Ser	gtc Val 530	ctt Leu	cag Gln	tct Ser	ggc Gly	gga Gly 535	aac Asn	tgg Trp	ata Ile	aag Lys	aat Asn 540	1876
aag Lys	ggc Gly	tct Ser	gac Asp	ttc Phe 545	tat Tyr	gtt Val	gac Asp	ttt Phe	agc Ser 550	tat Tyr	gaa Glu	tct Ser	aag Lys	caa Gln 555	gtt Val	1924
caa Gln	cag Gln	gat Asp	ttt Phe 560	ggc Gly	gat Asp	ggc Gly	aaa Lys	ggt Gly 565	acg Thr	gcc Ala	aag Lys	gct Ala	ttg Leu 570	ttg Leu	gag Glu	1972
aaa Lys	ata Ile	gca Ala 575	gga Gly	ttg Leu	gaa Glu	att Ile	gag Glu 580	gca Ala	cag Gln	aag Lys	tcc Ser	ttt Phe 585	atg Met	cac His	cgg Arg	2020
ttt Phe	aac Asn 590	att Ile	gca Ala	gca Ala	gac Asp	ttg Leu 595	ata Ile	caa Gln	gaa Glu	gcc Ala	aaa Lys 600	gag Glu	gct Ala	ggt Gly	gaa Glu	2068
ctg Leu 605	ggc Gly	ttt Phe	gct Ala	ggg Gly	atc Ile 610	ttg Leu	gtg Val	tgg Trp	atg Met	agg Arg 615	ttt Phe	atg Met	gct Ala	aca Thr	agg Arg 620	2116
cag Gln	cta Leu	ata Ile	tgg Trp	aat Asn 625	aaa Lys	aac Asn	tac Tyr	aat Asn	gtt Val 630	aaa Lys	cca Pro	cgt Arg	gaa Glu	atc Ile 635	agt Ser	2164
aaa Lys	gcc Ala	cag Gln	gat Asp 640	agg Arg	ctt Leu	aca Thr	gac Asp	ctg Leu 645	ctc Leu	cag Gln	aat Asn	gtc Val 650	tac Tyr	att Ile	agt Ser	2212
aat Asn	cca Pro	gag Glu 655	tat Tyr	agg Arg	gaa Glu	att Ile	gtg Val 660	cgc Arg	atg Met	att Ile	ttg Leu	tct Ser 665	act Thr	gtt Val	ggc Gly	2260
cgt Arg	gga Gly	ggt Gly	gaa Glu	gga Gly	gat Asp	gtg Val	gga Gly	cag Gln	cga Arg	att Ile	cgc Arg	gat Asp	gaa Glu	atc Ile	ctg Leu	2308

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670	675										680						
gtt Val 685	atc Ile	cag Gln	aga Arg	aac Asn	aat Asn 690	aat Asn	tgc Cys	aag Lys	ggt Gly	gga Gly 695	atg Met	atg Met	gaa Glu	gaa Glu	tgg Trp 700		2356
cat His	cag Gln	aag Lys	ttg Leu	cat His 705	aat Asn	aac Asn	act Thr	agt Ser	cct Pro 710	gat Asp	gat Asp	gtt Val	ata Ile	att Ile 715	tgt Cys		2404
cag Gln	gca Ala	ttg Leu	att Ile 720	gat Asp	tat Tyr	att Ile	aaa Lys	agt Ser 725	gac Asp	ttc Phe	gac Asp	atc Ile	agt Ser 730	gcc Ala	tac Tyr		2452
tgg Trp	aag Lys	act Thr 735	ttg Leu	aat Asn	gac Asp	aat Asn	ggc Gly 740	att Ile	acg Thr	aaa Lys	gaa Glu	cgt Arg 745	ctt Leu	cta Leu	agt Ser		2500
tat Tyr	gat Asp 750	cgt Arg	gcg Ala	atc Ile	cat His	tct Ser 755	gag Glu	cca Pro	aac Asn	ttc Phe	aga Arg 760	aga Arg	gat Asp	cag Gln	aag Lys		2548
gat Asp 765	ggt Gly	ctg Leu	ctg Leu	cgt Arg	gac Asp 770	cta Leu	gga Gly	aac Asn	tac Tyr	atg Met 775	aga Arg	acc Thr	tta Leu	aag Lys	gcg Ala 780		2596
gtt Val	cat His	tca Ser	ggt Gly	gca Ala 785	gat Asp	ctt Leu	gag Glu	tct Ser	gct Ala 790	atc Ile	acg Thr	aat Asn	tgc Cys	ttg Leu 795	ggc Gly		2644
tac Tyr	aga Arg	tct Ser	gag Glu 800	ggt Gly	caa Gln	ggg Gly	ttc Phe	atg Met 805	gtc Val	ggg Gly	gtg Val	cag Gln	ata Ile 810	aat Asn	cct Pro		2692
ata Ile	ccg Pro	aac Asn 815	ttg Leu	cca Pro	tct Ser	gga Gly	ttt Phe 820	cca Pro	gaa Glu	ttg Leu	ctt Leu	caa Gln 825	ttt Phe	gtc Val	tct Ser		2740
gag Glu	cat His 830	gtt Val	gaa Glu	gat Asp	aga Arg	aat Asn 835	gta Val	gaa Glu	gca Ala	ttg Leu	ctt Leu 840	gag Glu	ggt Gly	ttg Leu	ctg Leu		2788
gag Glu 845	gct Ala	cgt Arg	caa Gln	gag Glu	att Ile 850	cgg Arg	cca Pro	ttg Leu	ctg Leu	tgc Cys 855	aag Lys	cac His	aat Asn	gat Asp	cgt Arg 860		2836
ctg Leu	aag Lys	gat Asp	cta Leu	tta Leu 865	ttt Phe	ttg Leu	gac Asp	ata Ile	gcc Ala 870	ctt Leu	gag Glu	tct Ser	agt Ser	gtt Val 875	agg Arg		2884
aca Thr	gct Ala	att Ile	gaa Glu 880	aaa Lys	gga Gly	tac Tyr	gag Glu	gaa Glu 885	ttg Leu	aac Asn	gag Glu	gct Ala	gga Gly 890	ccg Pro	gag Glu		2932
aaa Lys	atc Ile	atg Met 895	tac Tyr	ttt Phe	gtc Val	tct Ser	ctg Leu 900	att Ile	ctt Leu	gaa Glu	aat Asn	ctc Leu 905	gca Ala	ctt Leu	tca Ser		2980
tta Leu	gat Asp 910	gac Asp	aat Asn	gag Glu	gat Asp	ctc Leu 915	atc Ile	tac Tyr	tgt Cys	tta Leu	aag Lys 920	ggt Gly	tgg Trp	agt Ser	aat Asn		3028
gct Ala 925	tta Leu	agc Ser	atg Met	tcc Ser	aag Lys 930	agt Ser	aaa Lys	agt Ser	gat Asp	aac Asn 935	tgg Trp	gca Ala	tta Leu	ttt Phe	gca Ala 940		3076
aaa Lys	tca Ser	gtt Val	ctt Leu	gac Asp	aga Arg	act Thr	cgc Arg	ctt Leu	gca Ala	ctc Leu	gcc Ala	ggc Gly	aag Lys	gca Ala	gac Asp		3124



BCS 04-5003-PCT\_Erhöhte Akt. OK1 & R1\_SEQUENZPROTOKOLL.ST25  
945 950 955

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960 965 970	
ttg agt gtt gat aag ttg gct gtg gac ata ttt aca gaa gaa atg atc	3220
Leu Ser Val Asp Lys Trp Ala Val Asp Ile Phe Thr Glu Glu Met Ile	
975 980 985	
cgt gct gga tca gct gca gct cta tcc tta ctc ctt aat cga ctt gat	3268
Arg Ala Gly Ser Ala Ala Ala Leu Ser Leu Leu Leu Asn Arg Leu Asp	
990 995 1000	
cca gtt ctt cgg aag aca gct agt ctg gga agt tgg cag gtt atc	3313
Pro Val Leu Arg Lys Thr Ala Ser Leu Gly Ser Trp Gln Val Ile	
1005 1010 1015	
agc cct gtt gaa gtt ttt gga tat gtc gca gtt gtg gat gag tta	3358
Ser Pro Val Glu Val Phe Gly Tyr Val Ala Val Val Asp Glu Leu	
1020 1025 1030	
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Leu Ala Val Gln Asp Lys Ser Tyr Asp Gln Pro Thr Ile Leu Leu	
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gca aga cgt gta aaa gga gag gaa gaa att cca cat ggc aca gtt	3448
Ala Arg Arg Val Lys Gly Glu Glu Glu Ile Pro His Gly Thr Val	
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Ala Val Leu Thr Ala Asp Met Pro Asp Val Leu Ser His Val Ser	
1065 1070 1075	
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Val Arg Ala Arg Asn Cys Lys Val Cys Phe Ala Thr Cys Phe Asp	
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ccc aat atc ttg gct gac cta caa tca aat gaa ggg aaa atg ctg	3583
Pro Asn Ile Leu Ala Asp Leu Gln Ser Asn Glu Gly Lys Met Leu	
1095 1100 1105	
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His Leu Lys Pro Thr Ser Ala Asp Ile Ala Tyr Ser Val Val Glu	
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Gly Ser Glu Leu Gln Asp Ser Ser Ser Ala Asn Leu Lys Glu Glu	
1125 1130 1135	
gat ggt cct tca tct tct gtt gca tta gtc aaa aag cag ttt gct	3718
Asp Gly Pro Ser Ser Ser Val Ala Leu Val Lys Lys Gln Phe Ala	
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Gly Arg Tyr Ala Ile Thr Ser Asp Glu Phe Thr Gly Glu Leu Val	
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Gly Ala Lys Ser Arg Asn Ile Ala Tyr Leu Lys Gly Lys Val Pro	
1170 1175 1180	
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Ser Trp Ile Gly Ile Pro Thr Ser Val Ala Leu Pro Phe Gly Val	
1185 1190 1195	
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Phe Glu Lys Val Leu Ser Asp Asp Ile Asn Gln Ala Val Ala Glu	

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1200	1205					1210									
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gcc Ala 1230	ctt Leu	agg Arg	gag Glu	att Ile	cgg Arg 1235	gaa Glu	aca Thr	gtt Val	tta Leu	cag Gln 1240	atg Met	aaa Lys	gca Ala	cca Pro	3988
aac Asn 1245	cag Gln	ttg Leu	gtc Val	caa Gln	gaa Glu 1250	ctg Leu	aag Lys	aca Thr	gag Glu	atg Met 1255	aaa Lys	agt Ser	tct Ser	ggt Gly	4033
atg Met 1260	cct Pro	tgg Trp	cct Pro	ggt Gly	gat Asp 1265	gaa Glu	ggt Gly	gag Glu	cag Gln	cgc Arg 1270	tgg Trp	gag Glu	caa Gln	gca Ala	4078
tgg Trp 1275	atg Met	gct Ala	atc Ile	aag Lys	aag Lys 1280	gtc Val	tgg Trp	gct Ala	tca Ser	aaa Lys 1285	tgg Trp	aat Asn	gag Glu	aga Arg	4123
gca Ala 1290	ttc Phe	ttc Phe	agc Ser	aca Thr	agg Arg 1295	aga Arg	gta Val	aaa Lys	tta Leu	gat Asp 1300	cat His	gaa Glu	tat Tyr	ctc Leu	4168
tgc Cys 1305	atg Met	gct Ala	gtc Val	ctg Leu	gtt Val 1310	cag Gln	gaa Glu	ata Ile	atc Ile	aat Asn 1315	gct Ala	gac Asp	tat Tyr	gca Ala	4213
ttt Phe 1320	gtt Val	atc Ile	cat His	aca Thr	act Thr 1325	aat Asn	ccc Pro	tct Ser	tca Ser	gga Gly 1330	gat Asp	tca Ser	tca Ser	gaa Glu	4258
ata Ile 1335	tat Tyr	gct Ala	gag Glu	gtg Val	gtg Val 1340	aag Lys	gga Gly	ctt Leu	gga Gly	gaa Glu 1345	act Thr	ctc Leu	gtt Val	gga Gly	4303
gct Ala 1350	tat Tyr	cca Pro	ggc Gly	cgt Arg	gct Ala 1355	ttg Leu	agt Ser	ttt Phe	gtc Val	tgc Cys 1360	aag Lys	aaa Lys	aat Asn	gat Asp	4348
ttg Leu 1365	aag Lys	tct Ser	cct Pro	cgg Arg	gtt Val 1370	ttg Leu	ggt Gly	tat Tyr	cca Pro	agc Ser 1375	aag Lys	ccc Pro	att Ile	ggg Gly	4393
ctt Leu 1380	ttt Phe	ata Ile	aga Arg	cga Arg	tca Ser 1385	atc Ile	atc Ile	ttc Phe	cga Arg	tct Ser 1390	gat Asp	tcc Ser	aat Asn	ggt Gly	4438
gaa Glu 1395	gat Asp	ctg Leu	gaa Glu	ggt Gly	tat Tyr 1400	gct Ala	ggt Gly	gct Ala	ggc Gly	ctt Leu 1405	tat Tyr	gat Asp	agt Ser	gtg Val	4483
cca Pro 1410	atg Met	gat Asp	gaa Glu	gcc Ala	gag Glu 1415	aaa Lys	gtt Val	gtg Val	ctt Leu	gat Asp 1420	tac Tyr	tct Ser	tca Ser	gac Asp	4528
cat His 1425	ctg Leu	atc Ile	act Thr	gac Asp	gga Gly 1430	cac His	ttc Phe	cag Gln	caa Gln	tca Ser 1435	att Ile	ctc Leu	tct Ser	tcc Ser	4573
att Ile 1440	gct Ala	cgt Arg	gca Ala	gga Gly	tgt Cys 1445	gag Glu	att Ile	gag Glu	gag Glu	cta Leu 1450	ttt Phe	gga Gly	tct Ser	gca Ala	4618
caa Gln	gac Asp	att Ile	gaa Glu	ggt Gly	gtg Val	gtt Val	agg Arg	gat Asp	ggg Gly	aaa Lys	ata Ile	tat Tyr	gtt Val	gtc Val	4663

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1455 1460 1465

cag aca aga ccc caa atg tga ggctgttctt tttctttttt attttttcct 4714  
 Gln Thr Arg Pro Gln Met  
 1470 1475

gattgggaag ctattgataa aagcattata tcaatgaaaa aaattaaaaa gaaattatag 4774  
 aggtcaagcc tagaaaggag gaaaggggag tgagtattta tttggaagca agtgaaataa 4834  
 aggtacaaaa ggagagagga ataaagttgc aatttcccag aacatgtaaa ttcacttgga 4894  
 aattgtgtac tggatgcttt gctctgtatg aagactaccg ggtcgaaatg acaacatttt 4954  
 tgtccatagg catgtaatgt tacatttgat tctgggtaat accatacgct tcattatagg 5014  
 ggatcagcag atactatgtt gtagttgaaa tgtaatgtta taataaaatg ttaatacaaa 5074  
 tgttataaca tttgtattaa cctgtaacgt gaaaaaaaaa aaaaaaaaaa 5124

&lt;210&gt; 7

&lt;211&gt; 1475

&lt;212&gt; PRT

&lt;213&gt; Citrus reticulata

&lt;400&gt; 7

Met Ser Asn Ser Ile Gly Arg Asn Val Leu His Gln Ser Leu Leu Cys  
 1 5 10 15

Ser Thr Val Phe Glu His Gln Ser Asn Arg His Ser Ser Gly Ile Pro  
 20 25 30

Ala Asn Ser Leu Phe Gln Ala Val Ser Ile Asn Gln Pro Ala Gly Ala  
 35 40 45

Ser Ala Ala Arg Lys Ser Pro Leu Ser Thr Lys Phe Tyr Gly Thr Ser  
 50 55 60

Leu Asn Ala Arg Pro Lys Met Ala Met Gly Arg His Arg Pro Val Leu  
 65 70 75 80

Ile Thr Pro Arg Ala Val Leu Ala Val Asp Ser Ala Ser Glu Leu Ala  
 85 90 95

Gly Lys Phe Asn Leu Glu Gly Asn Val Glu Leu Gln Ile Thr Val Gly  
 100 105 110

Ala Pro Thr Pro Gly Ser Leu Thr Gln Val Asn Ile Glu Ile Ser Tyr  
 115 120 125

Ser Ser Asn Ser Leu Leu Leu His Trp Gly Ala Ile Arg Asp Lys Lys  
 130 135 140

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Glu Lys Trp Val Leu Pro Ser Arg Pro Pro Asp Gly Thr Lys Ile Leu  
 145 150 155 160  
 Lys Asn Arg Ala Leu Arg Thr Pro Phe Val Ser Ser Gly Ser Lys Ser  
 165 170 175  
 Leu Val Lys Leu Glu Ile Asp Asp Pro Ala Ile Glu Ala Val Glu Phe  
 180 185 190  
 Leu Ile Leu Asp Glu Ala Gln Asn Lys Trp Phe Lys Asn Asn Gly Ala  
 195 200 205  
 Asn Phe His Val Lys Leu Pro Ser Glu Arg Ser Leu Ile Gln Asn Val  
 210 215 220  
 Ser Val Pro Glu Asp Leu Val Gln Thr Gln Ala Tyr Leu Arg Trp Glu  
 225 230 235 240  
 Arg Lys Gly Lys Gln Ile Tyr Thr Pro Glu Gln Glu Lys Glu Glu Tyr  
 245 250 255  
 Glu Ala Ala Arg Thr Glu Leu Leu Glu Glu Ile Val Arg Gly Thr Ser  
 260 265 270  
 Val Glu Asp Leu Arg Ala Lys Leu Thr Asn Lys Asn Asp Arg Gln Glu  
 275 280 285  
 Ile Lys Glu Ser Ser Ser His Gly Thr Lys Asn Ala Ile Pro Asp Asp  
 290 295 300  
 Leu Val Gln Ile Gln Ser Tyr Ile Arg Trp Glu Arg Ala Gly Lys Pro  
 305 310 315 320  
 Asn Tyr Ser Ala Asp Gln Gln Leu Arg Glu Phe Glu Glu Ala Arg Lys  
 325 330 335  
 Glu Leu Gln Ser Glu Leu Glu Lys Gly Ile Ser Leu Asp Glu Ile Trp  
 340 345 350  
 Lys Lys Ile Thr Lys Gly Glu Ile Gln Thr Lys Val Ser Asp Gln Leu  
 355 360 365  
 Lys Thr Lys Lys Tyr Phe Arg Thr Glu Arg Ile Gln Arg Lys Gln Arg  
 370 375 380  
 Asp Phe Met Gln Ile Leu Asn Lys His Val Ala Glu Pro Thr Glu Lys  
 385 390 395 400  
 Lys Asn Ile Ser Val Glu Pro Lys Ala Leu Thr Pro Val Glu Leu Phe  
 405 410 415

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Val Gly Ala Thr Glu Glu Gln Glu Gly Asp Ser Ile Leu Asn Lys Lys  
 420 425 430

Ile Tyr Lys Leu Ala Gly Lys Glu Leu Leu Val Leu Val His Lys Pro  
 435 440 445

Gly Gly Lys Thr Lys Ile His Leu Ala Thr Asp Gly Lys Glu Pro Leu  
 450 455 460

Ile Leu His Trp Ala Leu Ser Lys Lys Ala Gly Glu Trp Leu Ala Pro  
 465 470 475 480

Pro Pro Ser Val Leu Pro Ala Gly Ser Val Leu Leu Ser Gly Ser Val  
 485 490 495

Glu Thr Thr Phe Thr Thr Ser Ser Leu Ala Asp Leu Pro Tyr Gln Val  
 500 505 510

Gln Ser Ile Glu Ile Glu Ile Glu Glu Glu Gly Tyr Val Gly Met Pro  
 515 520 525

Ser Val Leu Gln Ser Gly Gly Asn Trp Ile Lys Asn Lys Gly Ser Asp  
 530 535 540

Phe Tyr Val Asp Phe Ser Tyr Glu Ser Lys Gln Val Gln Gln Asp Phe  
 545 550 555 560

Gly Asp Gly Lys Gly Thr Ala Lys Ala Leu Leu Glu Lys Ile Ala Gly  
 565 570 575

Leu Glu Ile Glu Ala Gln Lys Ser Phe Met His Arg Phe Asn Ile Ala  
 580 585 590

Ala Asp Leu Ile Gln Glu Ala Lys Glu Ala Gly Glu Leu Gly Phe Ala  
 595 600 605

Gly Ile Leu Val Trp Met Arg Phe Met Ala Thr Arg Gln Leu Ile Trp  
 610 615 620

Asn Lys Asn Tyr Asn Val Lys Pro Arg Glu Ile Ser Lys Ala Gln Asp  
 625 630 635 640

Arg Leu Thr Asp Leu Leu Gln Asn Val Tyr Ile Ser Asn Pro Glu Tyr  
 645 650 655

Arg Glu Ile Val Arg Met Ile Leu Ser Thr Val Gly Arg Gly Gly Glu  
 660 665 670

Gly Asp Val Gly Gln Arg Ile Arg Asp Glu Ile Leu Val Ile Gln Arg  
 675 680 685

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Asn Asn Asn Cys Lys Gly Gly Met Met Glu Glu Trp His Gln Lys Leu  
 690 695 700  
 His Asn Asn Thr Ser Pro Asp Asp Val Ile Ile Cys Gln Ala Leu Ile  
 705 710 715 720  
 Asp Tyr Ile Lys Ser Asp Phe Asp Ile Ser Ala Tyr Trp Lys Thr Leu  
 725 730 735  
 Asn Asp Asn Gly Ile Thr Lys Glu Arg Leu Leu Ser Tyr Asp Arg Ala  
 740 745 750  
 Ile His Ser Glu Pro Asn Phe Arg Arg Asp Gln Lys Asp Gly Leu Leu  
 755 760 765  
 Arg Asp Leu Gly Asn Tyr Met Arg Thr Leu Lys Ala Val His Ser Gly  
 770 775 780  
 Ala Asp Leu Glu Ser Ala Ile Thr Asn Cys Leu Gly Tyr Arg Ser Glu  
 785 790 795 800  
 Gly Gln Gly Phe Met Val Gly Val Gln Ile Asn Pro Ile Pro Asn Leu  
 805 810 815  
 Pro Ser Gly Phe Pro Glu Leu Leu Gln Phe Val Ser Glu His Val Glu  
 820 825 830  
 Asp Arg Asn Val Glu Ala Leu Leu Glu Gly Leu Leu Glu Ala Arg Gln  
 835 840 845  
 Glu Ile Arg Pro Leu Leu Cys Lys His Asn Asp Arg Leu Lys Asp Leu  
 850 855 860  
 Leu Phe Leu Asp Ile Ala Leu Glu Ser Ser Val Arg Thr Ala Ile Glu  
 865 870 875 880  
 Lys Gly Tyr Glu Glu Leu Asn Glu Ala Gly Pro Glu Lys Ile Met Tyr  
 885 890 895  
 Phe Val Ser Leu Ile Leu Glu Asn Leu Ala Leu Ser Leu Asp Asp Asn  
 900 905 910  
 Glu Asp Leu Ile Tyr Cys Leu Lys Gly Trp Ser Asn Ala Leu Ser Met  
 915 920 925  
 Ser Lys Ser Lys Ser Asp Asn Trp Ala Leu Phe Ala Lys Ser Val Leu  
 930 935 940  
 Asp Arg Thr Arg Leu Ala Leu Ala Gly Lys Ala Asp Trp Tyr Gln Lys  
 945 950 955 960

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Val Leu Gln Pro Ser Ala Glu Tyr Leu Gly Thr Leu Leu Ser Val Asp  
 965 970 975

Lys Trp Ala Val Asp Ile Phe Thr Glu Glu Met Ile Arg Ala Gly Ser  
 980 985 990

Ala Ala Ala Leu Ser Leu Leu Leu Asn Arg Leu Asp Pro Val Leu Arg  
 995 1000 1005

Lys Thr Ala Ser Leu Gly Ser Trp Gln Val Ile Ser Pro Val Glu  
 1010 1015 1020

Val Phe Gly Tyr Val Ala Val Val Asp Glu Leu Leu Ala Val Gln  
 1025 1030 1035

Asp Lys Ser Tyr Asp Gln Pro Thr Ile Leu Leu Ala Arg Arg Val  
 1040 1045 1050

Lys Gly Glu Glu Glu Ile Pro His Gly Thr Val Ala Val Leu Thr  
 1055 1060 1065

Ala Asp Met Pro Asp Val Leu Ser His Val Ser Val Arg Ala Arg  
 1070 1075 1080

Asn Cys Lys Val Cys Phe Ala Thr Cys Phe Asp Pro Asn Ile Leu  
 1085 1090 1095

Ala Asp Leu Gln Ser Asn Glu Gly Lys Met Leu His Leu Lys Pro  
 1100 1105 1110

Thr Ser Ala Asp Ile Ala Tyr Ser Val Val Glu Gly Ser Glu Leu  
 1115 1120 1125

Gln Asp Ser Ser Ser Ala Asn Leu Lys Glu Glu Asp Gly Pro Ser  
 1130 1135 1140

Ser Ser Val Ala Leu Val Lys Lys Gln Phe Ala Gly Arg Tyr Ala  
 1145 1150 1155

Ile Thr Ser Asp Glu Phe Thr Gly Glu Leu Val Gly Ala Lys Ser  
 1160 1165 1170

Arg Asn Ile Ala Tyr Leu Lys Gly Lys Val Pro Ser Trp Ile Gly  
 1175 1180 1185

Ile Pro Thr Ser Val Ala Leu Pro Phe Gly Val Phe Glu Lys Val  
 1190 1195 1200

Leu Ser Asp Asp Ile Asn Gln Ala Val Ala Glu Lys Leu Gln Ile  
 1205 1210 1215

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Leu Lys Gln Lys Leu Gly Glu Glu Asp His Ser Ala Leu Arg Glu  
 1220 1225 1230  
 Ile Arg Glu Thr Val Leu Gln Met Lys Ala Pro Asn Gln Leu Val  
 1235 1240 1245  
 Gln Glu Leu Lys Thr Glu Met Lys Ser Ser Gly Met Pro Trp Pro  
 1250 1255 1260  
 Gly Asp Glu Gly Glu Gln Arg Trp Glu Gln Ala Trp Met Ala Ile  
 1265 1270 1275  
 Lys Lys Val Trp Ala Ser Lys Trp Asn Glu Arg Ala Phe Phe Ser  
 1280 1285 1290  
 Thr Arg Arg Val Lys Leu Asp His Glu Tyr Leu Cys Met Ala Val  
 1295 1300 1305  
 Leu Val Gln Glu Ile Ile Asn Ala Asp Tyr Ala Phe Val Ile His  
 1310 1315 1320  
 Thr Thr Asn Pro Ser Ser Gly Asp Ser Ser Glu Ile Tyr Ala Glu  
 1325 1330 1335  
 Val Val Lys Gly Leu Gly Glu Thr Leu Val Gly Ala Tyr Pro Gly  
 1340 1345 1350  
 Arg Ala Leu Ser Phe Val Cys Lys Lys Asn Asp Leu Lys Ser Pro  
 1355 1360 1365  
 Arg Val Leu Gly Tyr Pro Ser Lys Pro Ile Gly Leu Phe Ile Arg  
 1370 1375 1380  
 Arg Ser Ile Ile Phe Arg Ser Asp Ser Asn Gly Glu Asp Leu Glu  
 1385 1390 1395  
 Gly Tyr Ala Gly Ala Gly Leu Tyr Asp Ser Val Pro Met Asp Glu  
 1400 1405 1410  
 Ala Glu Lys Val Val Leu Asp Tyr Ser Ser Asp His Leu Ile Thr  
 1415 1420 1425  
 Asp Gly His Phe Gln Gln Ser Ile Leu Ser Ser Ile Ala Arg Ala  
 1430 1435 1440  
 Gly Cys Glu Ile Glu Glu Leu Phe Gly Ser Ala Gln Asp Ile Glu  
 1445 1450 1455  
 Gly Val Val Arg Asp Gly Lys Ile Tyr Val Val Gln Thr Arg Pro  
 1460 1465 1470



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Gln Met  
1475

&lt;210&gt; 8

&lt;211&gt; 4200

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis thaliana

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(4200)

&lt;223&gt;

&lt;300&gt;

&lt;308&gt; EMBL / AF312027

&lt;309&gt; 2001-01-08

&lt;400&gt; 8

atg agt aac tct gta gtg cat aac tta ctt aac cgg ggt ttg att cgt	48
Met Ser Asn Ser Val Val His Asn Leu Leu Asn Arg Gly Leu Ile Arg	
1 5 10 15	
cct ctt aac ttt gaa cat caa aac aag ctc aac tcc tct gtg tac caa	96
Pro Leu Asn Phe Glu His Gln Asn Lys Leu Asn Ser Ser Val Tyr Gln	
20 25 30	
act tca aca gca aat ccg gct ctt ggc aag att ggc aga tca aaa ctt	144
Thr Ser Thr Ala Asn Pro Ala Leu Gly Lys Ile Gly Arg Ser Lys Leu	
35 40 45	
tac ggg aaa ggt ctt aag cag gca gga cgc agt ctg gtc act gaa aca	192
Tyr Gly Lys Gly Leu Lys Gln Ala Gly Arg Ser Leu Val Thr Glu Thr	
50 55 60	
gga gga aga cct ctc tca ttt gtt cca cga gct gtc ctt gcc atg gat	240
Gly Gly Arg Pro Leu Ser Phe Val Pro Arg Ala Val Leu Ala Met Asp	
65 70 75 80	
cct cag gca gcc gag aaa ttt agt ctt gac gga aat atc gat tta ctg	288
Pro Gln Ala Ala Glu Lys Phe Ser Leu Asp Gly Asn Ile Asp Leu Leu	
85 90 95	
gtt gaa gtc act tct aca act gta aga gaa gta aat atc cag ata gct	336
Val Glu Val Thr Ser Thr Thr Val Arg Glu Val Asn Ile Gln Ile Ala	
100 105 110	
tat aca agt gac aca ttg ttc cta cac tgg ggt gca att ctt gac aac	384
Tyr Thr Ser Asp Thr Leu Phe Leu His Trp Gly Ala Ile Leu Asp Asn	
115 120 125	
aaa gaa aat tgg gtt cta cct tct cgc tct ccg gat aga act caa aac	432
Lys Glu Asn Trp Val Leu Pro Ser Arg Ser Pro Asp Arg Thr Gln Asn	

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130					135					140							
ttc	aag	aac	agt	gcg	ctt	aga	act	cca	ttt	gtg	aaa	tcc	ggg	ggc	aat		480
Phe	Lys	Asn	Ser	Ala	Leu	Arg	Thr	Pro	Phe	Val	Lys	Ser	Gly	Gly	Asn		
145					150					155					160		
tct	cac	ctt	aaa	cta	gag	ata	gat	gat	cct	gcc	ata	cac	gct	att	gag		528
Ser	His	Leu	Lys	Leu	Glu	Ile	Asp	Asp	Pro	Ala	Ile	His	Ala	Ile	Glu		
				165					170					175			
ttc	ctt	ata	ttt	gac	gaa	agt	cgg	aac	aaa	tgg	tat	aaa	aat	aat	ggg		576
Phe	Leu	Ile	Phe	Asp	Glu	Ser	Arg	Asn	Lys	Trp	Tyr	Lys	Asn	Asn	Gly		
			180					185					190				
cag	aat	ttt	cat	ata	aac	tta	cca	acg	gaa	agg	aat	gtg	aaa	caa	aat		624
Gln	Asn	Phe	His	Ile	Asn	Leu	Pro	Thr	Glu	Arg	Asn	Val	Lys	Gln	Asn		
		195					200					205					
gtt	tct	gtt	cct	gaa	gat	ctt	gta	cag	atc	caa	gca	tat	ctt	aga	tgg		672
Val	Ser	Val	Pro	Glu	Asp	Leu	Val	Gln	Ile	Gln	Ala	Tyr	Leu	Arg	Trp		
	210					215					220						
gaa	cgt	aag	ggg	aaa	caa	atg	tac	aac	cct	gag	aaa	gag	aag	gag	gag		720
Glu	Arg	Lys	Gly	Lys	Gln	Met	Tyr	Asn	Pro	Glu	Lys	Glu	Lys	Glu	Glu		
225					230					235					240		
tat	gaa	gcc	gcc	cgg	acg	gag	cta	cgg	gag	gaa	atg	atg	cga	ggg	gct		768
Tyr	Glu	Ala	Ala	Arg	Thr	Glu	Leu	Arg	Glu	Glu	Met	Met	Arg	Gly	Ala		
				245					250					255			
tca	gtg	gaa	gat	ctc	aga	gca	aag	ctg	ttg	aag	aaa	gat	aac	agt	aat		816
Ser	Val	Glu	Asp	Leu	Arg	Ala	Lys	Leu	Leu	Lys	Lys	Asp	Asn	Ser	Asn		
			260					265					270				
gaa	tcc	cca	aaa	tct	aat	ggg	aca	tca	tcc	agt	gga	cgg	gag	gaa	aag		864
Glu	Ser	Pro	Lys	Ser	Asn	Gly	Thr	Ser	Ser	Ser	Gly	Arg	Glu	Glu	Lys		
		275					280					285					
aaa	aaa	gtt	tcc	aag	caa	cca	gag	cgt	aaa	aaa	aat	tat	aac	act	gac		912
Lys	Lys	Val	Ser	Lys	Gln	Pro	Glu	Arg	Lys	Lys	Asn	Tyr	Asn	Thr	Asp		
	290					295					300						
aag	atc	cag	cgc	aag	gga	agg	gac	ctg	act	aag	ctt	atc	tat	aag	cat		960
Lys	Ile	Gln	Arg	Lys	Gly	Arg	Asp	Leu	Thr	Lys	Leu	Ile	Tyr	Lys	His		
305					310					315					320		
gtt	gct	gat	ttt	gtt	gaa	cca	gaa	tcc	aaa	tcc	tca	tct	gaa	cca	cgg		1008
Val	Ala	Asp	Phe	Val	Glu	Pro	Glu	Ser	Lys	Ser	Ser	Ser	Glu	Pro	Arg		
				325					330					335			
tcc	tta	aca	act	ctg	gag	ata	tac	gcc	aaa	gca	aag	gag	gaa	caa	gaa		1056
Ser	Leu	Thr	Thr	Leu	Glu	Ile	Tyr	Ala	Lys	Ala	Lys	Glu	Glu	Gln	Glu		
			340					345					350				
acc	act	cca	gtc	ttt	agc	aag	aaa	aca	ttc	aag	ctt	gaa	ggc	agt	gcg		1104
Thr	Thr	Pro	Val	Phe	Ser	Lys	Lys	Thr	Phe	Lys	Leu	Glu	Gly	Ser	Ala		
		355					360					365					
att	ttg	gtg	ttt	gtt	act	aaa	ctt	tcc	gga	aag	acg	aaa	att	cat	gtg		1152
Ile	Leu	Val	Phe	Val	Thr	Lys	Leu	Ser	Gly	Lys	Thr	Lys	Ile	His	Val		
	370					375					380						
gca	act	gat	ttt	aaa	gag	ccg	gtt	acc	ctt	cac	tgg	gct	ttg	tct	caa		1200
Ala	Thr	Asp	Phe	Lys	Glu	Pro	Val	Thr	Leu	His	Trp	Ala	Leu	Ser	Gln		
385					390					395					400		
aag	ggg	gga	gaa	tgg	ttg	gac	cca	cct	tca	gat	ata	ctg	cca	cca	aac		1248
Lys	Gly	Gly	Glu	Trp	Leu	Asp	Pro	Pro	Ser	Asp	Ile	Leu	Pro	Pro	Asn		

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405410415																
tct Ser	ttg Leu	cca Pro	gta Val 420	cg Arg	gg Gly	gct Ala	gtt Val	gat Asp 425	aca Thr	aaa Lys	ctg Leu	acc Thr	atc Ile 430	act Thr	tca Ser	1296
aca Thr	gat Asp	ctt Leu 435	cct Pro	agt Ser	ccg Pro	gtt Val	caa Gln 440	act Thr	ttt Phe	gag Glu	ctg Leu	gaa Glu 445	ata Ile	gaa Glu	gg Gly	1344
gac Asp	agc Ser 450	tac Tyr	aag Lys	ggc Gly	atg Met	ccg Pro 455	ttt Phe	gta Val	ctc Leu	aat Asn	gct Ala 460	gg Gly	gaa Glu	agg Arg	tgg Trp	1392
att Ile 465	aaa Lys	aat Asn	aat Asn	gac Asp	agt Ser 470	gac Asp	ttt Phe	tat Tyr	gtg Val	gac Asp 475	ttt Phe	gct Ala	aaa Lys	gaa Glu	gaa Glu 480	1440
aaa Lys	cat His	gtt Val	cag Gln	aag Lys 485	gat Asp	tat Tyr	ggc Gly	gat Asp	gga Gly 490	aag Lys	gg Gly	aca Thr	gcc Ala	aag Lys 495	cat His	1488
tta Leu	ctg Leu	gac Asp	aaa Lys 500	atc Ile	gca Ala	gat Asp	ttg Leu	gag Glu 505	agt Ser	gag Glu	gcc Ala	cag Gln	aag Lys 510	tct Ser	ttc Phe	1536
atg Met	cat His	cga Arg 515	ttc Phe	aac Asn	att Ile	gca Ala	gca Ala 520	gat Asp	ctt Leu	gtg Val	gac Asp	gag Glu 525	gca Ala	aaa Lys	agt Ser	1584
gct Ala	gg Gly 530	caa Gln	ctg Leu	ggc Gly	ttt Phe	gca Ala 535	ggg Gly	atc Ile	cta Leu	gtc Val	tgg Trp 540	atg Met	agg Arg	ttt Phe	atg Met	1632
gct Ala 545	aca Thr	aga Arg	cag Gln	ctt Leu	gtg Val 550	tgg Trp	aac Asn	aaa Lys	aac Asn	tat Tyr 555	aat Asn	gtt Val	aag Lys	cca Pro	agg Arg 560	1680
gag Glu	ata Ile	agc Ser	aaa Lys	gcg Ala 565	cag Gln	gat Asp	aga Arg	ctg Leu	act Thr 570	gac Asp	ctt Leu	ctc Leu	cag Gln	gac Asp 575	gtt Val	1728
tat Tyr	gca Ala	agt Ser	tat Tyr 580	cca Pro	gag Glu	tac Tyr	aga Arg	gaa Glu 585	ctt Leu	ttg Leu	cgg Arg	atg Met	ata Ile 590	atg Met	tct Ser	1776
act Thr	gta Val	gg Gly 595	cga Arg	gga Gly	gg Gly	gaa Glu	gga Gly 600	gat Asp	gtc Val	ggg Gly	caa Gln	cga Arg 605	atc Ile	cgt Arg	gac Asp	1824
gaa Glu	att Ile 610	cta Leu	gtc Val	atc Ile	cag Gln	cgg Arg 615	aaa Lys	aat Asn	gac Asp	tgc Cys	aag Lys 620	gg Gly	gga Gly	att Ile	atg Met	1872
gag Glu 625	gaa Glu	tgg Trp	cat His	cag Gln	aag Lys 630	ttg Leu	cat His	aac Asn	aac Asn	act Thr 635	agt Ser	cca Pro	gat Asp	gat Asp	gtt Val 640	1920
gtc Val	atc Ile	tgt Cys	cag Gln	gca Ala 645	ttg Leu	atg Met	gat Asp	tat Tyr	atc Ile 650	aaa Lys	agt Ser	gac Asp	ttt Phe	gac Asp 655	tta Leu	1968
agt Ser	gtt Val	tac Tyr	tgg Trp 660	aag Lys	acc Thr	ttg Leu	aac Asn	gat Asp 665	aat Asn	ggc Gly	ata Ile	acc Thr	aaa Lys 670	gag Glu	cga Arg	2016
ctc Leu	tta Leu	agt Ser	tat Tyr	gat Asp	cgt Arg	gct Ala	ata Ile	cat His	tct Ser	gaa Glu	cca Pro	aat Asn	ttt Phe	aga Arg	gga Gly	2064

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 675 680 685

gaa Glu	caa Gln 690	aaa Lys	gac Asp	ggt Gly	ctt Leu	ttg Leu 695	cgt Arg	gat Asp	ctt Leu	gga Gly	cac His 700	tac Tyr	atg Met	agg Arg	act Thr	2112
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tgc Cys	atg Met	ggc Gly	tac Tyr	caa Gln 725	gat Asp	gac Asp	ggt Gly	gaa Glu	ggt Gly 730	ttc Phe	atg Met	gtt Val	ggg Gly	gtg Val 735	cag Gln	2208
ata Ile	aat Asn	cct Pro	gta Val 740	tca Ser	gga Gly	ttg Leu	cct Pro	tct Ser 745	gga Gly	tat Tyr	cca Pro	gac Asp	ttg Leu 750	ctt Leu	cgt Arg	2256
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ggt Gly 770	ttg Leu	ctt Leu	gaa Glu	gct Ala	cgt Arg	caa Gln 775	gag Glu	cta Leu	agg Arg	cca Pro	ctt Leu 780	ctg Leu	ctg Leu	aag Lys	tcc Ser	2352
cat His 785	gac Asp	cgc Arg	ctc Leu	aag Lys	gat Asp 790	ctg Leu	tta Leu	ttc Phe	ttg Leu	gac Asp 795	ctc Leu	gct Ala	ctt Leu	gat Asp	tct Ser 800	2400
act Thr	gtc Val	aga Arg	aca Thr	gcg Ala 805	att Ile	gaa Glu	aga Arg	gga Gly	tat Tyr 810	gag Glu	caa Gln	ttg Leu	aat Asn	gat Asp 815	gct Ala	2448
gga Gly	cct Pro	gag Glu	aaa Lys 820	atc Ile	atg Met	tac Tyr	ttc Phe	atc Ile 825	agc Ser	cta Leu	gtt Val	ctt Leu	gaa Glu 830	aat Asn	ctt Leu	2496
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ctg Leu 865	tat Tyr	gca Ala	aaa Lys	tct Ser	gtt Val 870	ctt Leu	gac Asp	aga Arg	agc Ser	cga Arg 875	cta Leu	gca Ala	ctg Leu	gca Ala	agc Ser 880	2640
aaa Lys	gct Ala	gag Glu	agg Arg	tac Tyr 885	ctt Leu	gaa Glu	att Ile	ctg Leu	caa Gln 890	cca Pro	tcg Ser	gct Ala	gaa Glu	tat Tyr 895	ctt Leu	2688
gga Gly	tct Ser	tgt Cys	ctt Leu 900	gga Gly	gtc Val	gat Asp	cag Gln	tcg Ser 905	gct Ala	gtt Val	agt Ser	ata Ile	ttt Phe 910	act Thr	gaa Glu	2736
gag Glu	atc Ile	att Ile 915	cga Arg	gct Ala	gga Gly	tct Ser	gca Ala 920	gca Ala	gca Ala	ttg Leu	tcg Ser	tca Ser 925	ctt Leu	gtt Val	aac Asn	2784
cga Arg	ctt Leu 930	gac Asp	cca Pro	gtt Val	ctt Leu	agg Arg 935	aag Lys	act Thr	gct Ala	aac Asn	ttg Leu 940	gga Gly	agt Ser	tgg Trp	cag Gln	2832
gtt Val	att Ile	agt Ser	cct Pro	gta Val	gag Glu	gtc Val	gtc Val	gga Gly	tat Tyr	gtc Val	att Ile	gtt Val	gtg Val	gac Asp	gaa Glu	2880

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cca act tca gtt gcg ttg cca ttt ggt gtt ttt gag aag gtt atc	Pro Thr Ser Val Ala Leu Pro Phe Gly Val Phe Glu Lys Val Ile					1115					1120					3384	
tcc gaa aag gcg aat cag gcg gtg aac gat aaa ttg cta gta ttg	Ser Glu Lys Ala Asn Gln Ala Val Asn Asp Lys Leu Leu Val Leu					1130					1135					3429	
aag aaa act ctt gat gag gga gac caa ggt gct ctg aag gaa atc	Lys Lys Thr Leu Asp Glu Gly Asp Gln Gly Ala Leu Lys Glu Ile					1145					1150					3474	
cgg cag aca ctg ttg ggg cta gtt gca ccc cca gaa ctg gtt gaa	Arg Gln Thr Leu Leu Gly Leu Val Ala Pro Pro Glu Leu Val Glu					1160					1165					3519	
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aag gtc tgg gct tcg aaa tgg aac gag aga gca tac ttc agc acg	Lys Val Trp Ala Ser Lys Trp Asn Glu Arg Ala Tyr Phe Ser Thr					1200										3654	

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act Thr	aat Asn 1250	cca Pro	tct Ser	tct Ser	gga Gly	gat Asp 1255	tca Ser	tca Ser	gag Glu	att Ile	tat Tyr 1260	gcc Ala	gag Glu	gtg Val	3789		
gtc Val	aaa Lys 1265	ggc Gly	ctt Leu	ggg Gly	gaa Glu	act Thr 1270	ctt Leu	gta Val	gga Gly	gca Ala	tat Tyr 1275	ccc Pro	ggg Gly	cgg Arg	3834		
tct Ser	ctg Leu 1280	agt Ser	ttc Phe	atc Ile	tgc Cys	aag Lys 1285	aaa Lys	aac Asn	aac Asn	ctt Leu	gat Asp 1290	tcg Ser	cct Pro	ctg Leu	3879		
gtg Val	ttg Leu 1295	ggc Gly	tac Tyr	cca Pro	agc Ser	aaa Lys 1300	ccg Pro	att Ile	ggg Gly	ctg Leu	ttc Phe 1305	ata Ile	aga Arg	cgt Arg	3924		
tca Ser	atc Ile 1310	atc Ile	ttc Phe	aga Arg	tct Ser	gat Asp 1315	tcc Ser	aat Asn	gga Gly	gaa Glu	gat Asp 1320	ctt Leu	gaa Glu	ggt Gly	3969		
tat Tyr	gca Ala 1325	ggg Gly	gca Ala	ggc Gly	ctc Leu	tac Tyr 1330	gac Asp	agt Ser	gta Val	cca Pro	atg Met 1335	gac Asp	gag Glu	gaa Glu	4014		
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ttg Leu	agc Ser 1355	ttc Phe	cag Gln	aaa Lys	aag Lys	gtt Val 1360	ctc Leu	tca Ser	gac Asp	att Ile	gca Ala 1365	cgc Arg	gct Ala	gga Gly	4104		
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&lt;400&gt; 9

Met Ser Asn Ser Val Val His Asn Leu Leu Asn Arg Gly Leu Ile Arg

Glu Ser Pro Lys Ser Asn Gly Thr Ser Ser Ser Gly Arg Glu Glu Lys

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 275 280 285

Lys Lys Val Ser Lys Gln Pro Glu Arg Lys Lys Asn Tyr Asn Thr Asp  
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Lys Ile Gln Arg Lys Gly Arg Asp Leu Thr Lys Leu Ile Tyr Lys His  
 305 310 315 320

Val Ala Asp Phe Val Glu Pro Glu Ser Lys Ser Ser Ser Glu Pro Arg  
 325 330 335

Ser Leu Thr Thr Leu Glu Ile Tyr Ala Lys Ala Lys Glu Glu Gln Glu  
 340 345 350

Thr Thr Pro Val Phe Ser Lys Lys Thr Phe Lys Leu Glu Gly Ser Ala  
 355 360 365

Ile Leu Val Phe Val Thr Lys Leu Ser Gly Lys Thr Lys Ile His Val  
 370 375 380

Ala Thr Asp Phe Lys Glu Pro Val Thr Leu His Trp Ala Leu Ser Gln  
 385 390 395 400

Lys Gly Gly Glu Trp Leu Asp Pro Pro Ser Asp Ile Leu Pro Pro Asn  
 405 410 415

Ser Leu Pro Val Arg Gly Ala Val Asp Thr Lys Leu Thr Ile Thr Ser  
 420 425 430

Thr Asp Leu Pro Ser Pro Val Gln Thr Phe Glu Leu Glu Ile Glu Gly  
 435 440 445

Asp Ser Tyr Lys Gly Met Pro Phe Val Leu Asn Ala Gly Glu Arg Trp  
 450 455 460

Ile Lys Asn Asn Asp Ser Asp Phe Tyr Val Asp Phe Ala Lys Glu Glu  
 465 470 475 480

Lys His Val Gln Lys Asp Tyr Gly Asp Gly Lys Gly Thr Ala Lys His  
 485 490 495

Leu Leu Asp Lys Ile Ala Asp Leu Glu Ser Glu Ala Gln Lys Ser Phe  
 500 505 510

Met His Arg Phe Asn Ile Ala Ala Asp Leu Val Asp Glu Ala Lys Ser  
 515 520 525

Ala Gly Gln Leu Gly Phe Ala Gly Ile Leu Val Trp Met Arg Phe Met  
 530 535 540

Ala Thr Arg Gln Leu Val Trp Asn Lys Asn Tyr Asn Val Lys Pro Arg  
 Seite 40



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 545 550 555 560

Glu Ile Ser Lys Ala Gln Asp Arg Leu Thr Asp Leu Leu Gln Asp Val  
 565 570 575

Tyr Ala Ser Tyr Pro Glu Tyr Arg Glu Leu Leu Arg Met Ile Met Ser  
 580 585 590

Thr Val Gly Arg Gly Gly Glu Gly Asp Val Gly Gln Arg Ile Arg Asp  
 595 600 605

Glu Ile Leu Val Ile Gln Arg Lys Asn Asp Cys Lys Gly Gly Ile Met  
 610 615 620

Glu Glu Trp His Gln Lys Leu His Asn Asn Thr Ser Pro Asp Asp Val  
 625 630 635 640

Val Ile Cys Gln Ala Leu Met Asp Tyr Ile Lys Ser Asp Phe Asp Leu  
 645 650 655

Ser Val Tyr Trp Lys Thr Leu Asn Asp Asn Gly Ile Thr Lys Glu Arg  
 660 665 670

Leu Leu Ser Tyr Asp Arg Ala Ile His Ser Glu Pro Asn Phe Arg Gly  
 675 680 685

Glu Gln Lys Asp Gly Leu Leu Arg Asp Leu Gly His Tyr Met Arg Thr  
 690 695 700

Leu Lys Ala Val His Ser Gly Ala Asp Leu Glu Ser Ala Ile Gln Asn  
 705 710 715 720

Cys Met Gly Tyr Gln Asp Asp Gly Glu Gly Phe Met Val Gly Val Gln  
 725 730 735

Ile Asn Pro Val Ser Gly Leu Pro Ser Gly Tyr Pro Asp Leu Leu Arg  
 740 745 750

Phe Val Leu Glu His Val Glu Glu Lys Asn Val Glu Pro Leu Leu Glu  
 755 760 765

Gly Leu Leu Glu Ala Arg Gln Glu Leu Arg Pro Leu Leu Leu Lys Ser  
 770 775 780

His Asp Arg Leu Lys Asp Leu Leu Phe Leu Asp Leu Ala Leu Asp Ser  
 785 790 795 800

Thr Val Arg Thr Ala Ile Glu Arg Gly Tyr Glu Gln Leu Asn Asp Ala  
 805 810 815

Gly Pro Glu Lys Ile Met Tyr Phe Ile Ser Leu Val Leu Glu Asn Leu  
 Seite 41

BCS 04-5003-PCT\_Erhöhte Akt. OK1 & R1\_SEQUENZPROTOKOLL.ST25  
 820 825 830

Ala Leu Ser Ser Asp Asp Asn Glu Asp Leu Ile Tyr Cys Leu Lys Gly  
 835 840 845

Trp Gln Phe Ala Leu Asp Met Cys Lys Ser Lys Lys Asp His Trp Ala  
 850 855 860

Leu Tyr Ala Lys Ser Val Leu Asp Arg Ser Arg Leu Ala Leu Ala Ser  
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Lys Ala Glu Arg Tyr Leu Glu Ile Leu Gln Pro Ser Ala Glu Tyr Leu  
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Gly Ser Cys Leu Gly Val Asp Gln Ser Ala Val Ser Ile Phe Thr Glu  
 900 905 910

Glu Ile Ile Arg Ala Gly Ser Ala Ala Ala Leu Ser Ser Leu Val Asn  
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Arg Leu Asp Pro Val Leu Arg Lys Thr Ala Asn Leu Gly Ser Trp Gln  
 930 935 940

Val Ile Ser Pro Val Glu Val Val Gly Tyr Val Ile Val Val Asp Glu  
 945 950 955 960

Leu Leu Thr Val Gln Asn Lys Thr Tyr Asp Arg Pro Thr Ile Ile Val  
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Ala Asn Arg Val Arg Gly Glu Glu Glu Ile Pro Asp Gly Ala Val Ala  
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Val Leu Thr Pro Asp Met Pro Asp Val Leu Ser His Val Ser Val Arg  
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Ala Arg Asn Gly Lys Ile Cys Phe Ala Thr Cys Phe Asp Ser Gly  
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Ile Leu Ser Asp Leu Gln Gly Lys Asp Gly Lys Leu Leu Ser Leu  
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Gln Pro Thr Ser Ala Asp Val Val Tyr Lys Glu Val Asn Asp Ser  
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Glu Leu Ser Ser Pro Ser Ser Asp Asn Leu Glu Asp Ala Pro Pro  
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Ser Ile Ser Leu Val Lys Lys Gln Phe Ala Gly Arg Tyr Ala Ile  
 1070 1075 1080

Ser Ser Glu Glu Phe Thr Ser Asp Leu Val Gly Ala Lys Ser Arg  
 Seite 42

BCS 04-5003-PCT\_Erhöhte Akt. OK1 & R1\_SEQUENZPROTOKOLL.ST25  
 1085 1090 1095

Asn Ile Gly Tyr Leu Lys Gly Lys Val Pro Ser Trp Val Gly Ile  
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Pro Thr Ser Val Ala Leu Pro Phe Gly Val Phe Glu Lys Val Ile  
 1115 1120 1125

Ser Glu Lys Ala Asn Gln Ala Val Asn Asp Lys Leu Leu Val Leu  
 1130 1135 1140

Lys Lys Thr Leu Asp Glu Gly Asp Gln Gly Ala Leu Lys Glu Ile  
 1145 1150 1155

Arg Gln Thr Leu Leu Gly Leu Val Ala Pro Pro Glu Leu Val Glu  
 1160 1165 1170

Glu Leu Lys Ser Thr Met Lys Ser Ser Asp Met Pro Trp Pro Gly  
 1175 1180 1185

Asp Glu Gly Glu Gln Arg Trp Glu Gln Ala Trp Ala Ala Ile Lys  
 1190 1195 1200

Lys Val Trp Ala Ser Lys Trp Asn Glu Arg Ala Tyr Phe Ser Thr  
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Arg Lys Val Lys Leu Asp His Asp Tyr Leu Cys Met Ala Val Leu  
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Val Gln Glu Val Ile Asn Ala Asp Tyr Ala Phe Val Ile His Thr  
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Thr Asn Pro Ser Ser Gly Asp Ser Ser Glu Ile Tyr Ala Glu Val  
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Val Lys Gly Leu Gly Glu Thr Leu Val Gly Ala Tyr Pro Gly Arg  
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Ser Leu Ser Phe Ile Cys Lys Lys Asn Asn Leu Asp Ser Pro Leu  
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Val Leu Gly Tyr Pro Ser Lys Pro Ile Gly Leu Phe Ile Arg Arg  
 1295 1300 1305

Ser Ile Ile Phe Arg Ser Asp Ser Asn Gly Glu Asp Leu Glu Gly  
 1310 1315 1320

Tyr Ala Gly Ala Gly Leu Tyr Asp Ser Val Pro Met Asp Glu Glu  
 1325 1330 1335

Asp Gln Val Val Leu Asp Tyr Thr Thr Asp Pro Leu Ile Thr Asp

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Leu Ser Phe Gln Lys Lys Val Leu Ser Asp Ile Ala Arg Ala Gly  
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Val

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 Met Ser Asn Ser  
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 Leu Gly Asn Asn Leu Leu Tyr Gln Gly Phe Leu Thr Ser Thr Val Leu  
 5 10 15 20

gaa cat aaa agt aga atc agt cct cct tgt gtt gga ggc aat tct ttg 212  
 Glu His Lys Ser Arg Ile Ser Pro Pro Cys Val Gly Gly Asn Ser Leu  
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ttt caa caa caa gtg atc tcg aaa tca cct tta tca act gag ttt cga 260  
 Phe Gln Gln Gln Val Ile Ser Lys Ser Pro Leu Ser Thr Glu Phe Arg  
 40 45 50

ggg aac agg tta aag gtg cag aaa aag aaa ata cct atg gaa aag aag 308  
 Gly Asn Arg Leu Lys Val Gln Lys Lys Lys Ile Pro Met Glu Lys Lys  
 Seite 44

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Arg	Ala	Phe	Ser	Ser	Ser	Pro	His	Ala	Val	Leu	Thr	Thr	Asp	Thr	Ser		
	70					75					80						
tct	gag	cta	gca	gaa	aag	ttc	agt	cta	ggg	ggg	aat	att	gag	cta	cag		404
Ser	Glu	Leu	Ala	Glu	Lys	Phe	Ser	Leu	Gly	Gly	Asn	Ile	Glu	Leu	Gln		100
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gtt	gat	gtt	agg	cct	ccc	act	tca	ggg	gat	gtg	tcc	ttt	gtg	gat	ttt		452
Val	Asp	Val	Arg	Pro	Pro	Thr	Ser	Gly	Asp	Val	Ser	Phe	Val	Asp	Phe		
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caa	gta	aca	aat	ggg	agt	gat	aaa	ctg	ttt	ttg	cac	tgg	ggg	gca	gta		500
Gln	Val	Thr	Asn	Gly	Ser	Asp	Lys	Leu	Phe	Leu	His	Trp	Gly	Ala	Val		
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aaa	ttc	ggg	aaa	gaa	aca	tgg	tct	ctt	ccg	aat	gat	cgt	cca	gat	ggg		548
Lys	Phe	Gly	Lys	Glu	Thr	Trp	Ser	Leu	Pro	Asn	Asp	Arg	Pro	Asp	Gly		
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acc	aaa	gtg	tac	aag	aac	aaa	gca	ctt	aga	act	cca	ttt	gtt	aaa	tct		596
Thr	Lys	Val	Tyr	Lys	Asn	Lys	Ala	Leu	Arg	Thr	Pro	Phe	Val	Lys	Ser		
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ggc	tct	aac	tcc	atc	ctg	aga	ctg	gag	ata	cga	gac	act	gct	atc	gaa		644
Gly	Ser	Asn	Ser	Ile	Leu	Arg	Leu	Glu	Ile	Arg	Asp	Thr	Ala	Ile	Glu		180
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Ala	Ile	Glu	Phe	Leu	Ile	Tyr	Asp	Glu	Ala	His	Asp	Lys	Trp	Ile	Lys		
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aat	aat	ggg	ggg	aat	ttt	cgt	gtc	aaa	ttg	tca	aga	aaa	gag	ata	cga		740
Asn	Asn	Gly	Gly	Asn	Phe	Arg	Val	Lys	Leu	Ser	Arg	Lys	Glu	Ile	Arg		
			200				205						210				
ggc	cca	gat	gtt	tct	gtt	cct	gag	gag	ctt	gta	cag	atc	caa	tca	tat		788
Gly	Pro	Asp	Val	Ser	Val	Pro	Glu	Glu	Leu	Val	Gln	Ile	Gln	Ser	Tyr		
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Lys	Glu	Glu	Tyr	Glu	Ala	Ala	Arg	Thr	Val	Leu	Gln	Glu	Glu	Ile	Ala		260
	245			250						255					260		
cgt	ggg	gct	tcc	ata	cag	gac	att	cga	gca	agg	cta	aca	aaa	act	aat		932
Arg	Gly	Ala	Ser	Ile	Gln	Asp	Ile	Arg	Ala	Arg	Leu	Thr	Lys	Thr	Asn		
				265					270					275			
gat	aaa	agt	caa	agc	aaa	gaa	gag	cct	ctt	cat	gta	aca	aag	agt	gat		980
Asp	Lys	Ser	Gln	Ser	Lys	Glu	Glu	Pro	Leu	His	Val	Thr	Lys	Ser	Asp		
			280					285					290				
ata	cct	gat	gac	ctt	gcc	caa	gca	caa	gct	tac	att	agg	tgg	gag	aaa		1028
Ile	Pro	Asp	Asp	Leu	Ala	Gln	Ala	Gln	Ala	Tyr	Ile	Arg	Trp	Glu	Lys		
		295					300					305					
gca	gga	aag	ccg	aac	tat	cct	cca	gaa	aag	caa	att	gaa	gaa	ctc	gaa		1076
Ala	Gly	Lys	Pro	Asn	Tyr	Pro	Pro	Glu	Lys	Gln	Ile	Glu	Glu	Leu	Glu		
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gaa	gca	aga	aga	gaa	ttg	caa	ctt	gag	ctt	gag	aaa	ggc	att	acc	ctt		1124
Glu	Ala	Arg	Arg	Glu	Leu	Gln	Leu	Glu	Leu	Glu	Lys	Gly	Ile	Thr	Leu		

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325	330					335					340						
gat gag ttg cgg aaa acg att aca aaa ggg gag ata aaa act aag gtg	Asp Glu Leu Arg Lys 345					Thr Ile Thr Lys Gly 350					Ile Lys Thr Lys Val 355					1172	
gaa aag cac ctg aaa aga agt tct ttt gcc gtt gaa aga atc caa aga	Glu Lys His Leu Lys 360					Phe Ala Val Glu Arg 370					Ile Gln Arg 375					1220	
aag aag aga gac ttt ggg cat ctt att aat aag tat act tcc agt cct	Lys Lys Arg Asp Phe 375					Gly His Leu Ile Asn Lys 380					Tyr Thr Ser Ser Pro 385					1268	
gca gta caa gta caa aag gtc ttg gaa gaa cca cca gcc tta tct aaa	Ala Val Gln Val Gln Lys 390					Val Leu Glu Glu Pro 400					Ala Leu Ser Lys 405					1316	
att aag ctg tat gcc aag gag aag gag gag cag att gat gat ccg atc	Ile Lys Leu Tyr Ala Lys 410					Glu Lys Glu Glu Gln 415					Ile Asp Asp Pro Ile 420					1364	
cta aat aaa aag atc ttt aag gtc gat gat ggg gag cta ctg gta ctg	Leu Asn Lys Lys Ile 425					Phe Lys Val Asp Asp 430					Gly Glu Leu Leu Val 435					1412	
gta gca aag tcc tct ggg aag aca aaa gta cat cta gct aca gat ctg	Val Ala Lys Ser Ser 440					Gly Lys Thr Lys Val 445					His Leu Ala Thr Asp 450					1460	
aat cag cca att act ctt cac tgg gca tta tcc aaa agt cct gga gag	Asn Gln Pro Ile Thr Leu 455					His Trp Ala Leu Ser Lys 460					Ser Thr Pro Gly Glu 465					1508	
tgg atg gta cca cct tca agc ata ttg cct cct ggg tca att att tta	Trp Met Val Pro Pro Ser 470					Ser Ile Leu Pro Pro Gly 480					Ser Ile Ile Leu 485					1556	
gac aag gct gcc gaa aca cct ttt tca gcc agt tct tct gat ggt cta	Asp Lys Ala Ala Glu Thr 490					Pro Phe Ser Ala Ser 495					Ser Ser Asp Gly Leu 500					1604	
act tct aag gta caa tct ttg gat ata gta att gaa gat ggc aat ttt	Thr Ser Lys Val Gln 505					Ser Leu Asp Ile Val 510					Ile Glu Asp Gly Asn 515					1652	
gtg ggg atg cca ttt gtt ctt ttg tct ggt gaa aaa tgg att aag aac	Val Gly Met Pro Phe Val 520					Leu Leu Ser Gly Glu Lys 525					Trp Ile Lys Asn 530					1700	
caa ggg tcg gat ttc tat gtt ggc ttc agt gct gca tcc aaa tta gca	Gln Gly Ser Asp Phe Tyr Val 535					Gly Phe Ser Ala Ala Ser 540					Lys Leu Ala 545					1748	
ctc aag gct gct ggg gat ggc agt gga act gca aag tct tta ctg gat	Leu Lys Ala Ala Gly Asp 550					Ser Ser Gly Thr Ala Lys 555					Ser Leu Leu Asp 560					1796	
aaa ata gca gat atg gaa agt gag gct cag aag tca ttt atg cac cgg	Lys Ile Ala Asp Met Glu 565					Ser Ser Glu Ala Gln Lys 570					Ser Phe Met His Arg 575					1844	
ttt aat att gca gct gac ttg ata gaa gat gcc act agt gct ggt gaa	Phe Asn Ile Ala Ala Asp 585					Leu Ile Glu Asp Ala Thr 590					Ser Ser Ala Gly Glu 595					1892	
ctt ggt ttt gct gga att ctt gta tgg atg agg ttc atg gct aca agg	Leu Gly Phe Ala Gly Ile 595					Val Trp Met Arg Phe 600					Met Ala Thr Arg 605					1940	

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caa	ctg	ata	tgg	aac	aaa	aac	tat	aac	gta	aaa	cca	cgt	gaa	ata	agc	1988
Gln	Leu	Ile	Trp	Asn	Lys	Asn	Tyr	Asn	Val	Lys	Pro	Arg	Glu	Ile	Ser	
aag	gct	cag	gac	aga	ctt	aca	gac	ttg	ttg	cag	aat	gct	ttc	acc	agt	2036
Lys	Ala	Gln	Asp	Arg	Leu	Thr	Asp	Leu	Leu	Gln	Asn	Ala	Phe	Thr	Ser	
cac	cct	cag	tac	cgt	gaa	att	ttg	cgg	atg	att	atg	tca	act	gtt	gga	2084
His	Pro	Gln	Tyr	Arg	Glu	Ile	Leu	Arg	Met	Ile	Met	Ser	Thr	Val	Gly	
cgt	gga	ggt	gaa	ggg	gat	gta	gga	cag	cga	att	agg	gat	gaa	att	ttg	2132
Arg	Gly	Gly	Glu	Gly	Asp	Val	Gly	Gln	Arg	Ile	Arg	Asp	Glu	Ile	Leu	
gtc	atc	cag	agg	aac	aat	gac	tgc	aag	ggt	ggt	atg	atg	caa	gaa	ttg	2180
Val	Ile	Gln	Arg	Asn	Asn	Asp	Cys	Lys	Gly	Gly	Met	Met	Gln	Glu	Trp	
cat	cag	aaa	ttg	cat	aat	aat	act	agt	cct	gat	gat	gtt	gtg	atc	tgt	2228
His	Gln	Lys	Leu	His	Asn	Asn	Thr	Ser	Pro	Asp	Asp	Val	Val	Ile	Cys	
cag	gca	tta	att	gac	tac	atc	aag	agt	gat	ttt	gat	ctt	ggt	gtt	tat	2276
Gln	Ala	Leu	Ile	Asp	Tyr	Ile	Lys	Ser	Asp	Phe	Asp	Leu	Gly	Val	Tyr	
ttg	aaa	acc	ctg	aat	gag	aac	gga	ata	aca	aaa	gag	cgt	ctt	ttg	agt	2324
Trp	Lys	Thr	Leu	Asn	Glu	Asn	Gly	Ile	Thr	Lys	Glu	Arg	Leu	Leu	Ser	
tat	gac	cgt	gct	atc	cat	tct	gaa	cca	aat	ttt	aga	gga	gat	caa	aag	2372
Tyr	Asp	Arg	Ala	Ile	His	Ser	Glu	Pro	Asn	Phe	Arg	Gly	Asp	Gln	Lys	
ggt	ggt	ctt	ttg	cgt	gat	tta	ggt	cac	tat	atg	aga	aca	ttg	aag	gca	2420
Gly	Gly	Leu	Leu	Arg	Asp	Leu	Gly	His	Tyr	Met	Arg	Thr	Leu	Lys	Ala	
gtt	cat	tca	ggt	gca	gat	ctt	gag	tct	gct	att	gca	aac	tgc	atg	ggc	2468
Val	His	Ser	Gly	Ala	Asp	Leu	Glu	Ser	Ala	Ile	Ala	Asn	Cys	Met	Gly	
tac	aaa	act	gag	gga	gaa	ggc	ttt	atg	gtt	gga	gtc	cag	ata	aat	cct	2516
Tyr	Lys	Thr	Glu	Gly	Glu	Gly	Phe	Met	Val	Gly	Val	Gln	Ile	Asn	Pro	
gta	tca	ggc	ttg	cca	tct	ggc	ttt	cag	gac	ctc	ctc	cat	ttt	gtc	tta	2564
Val	Ser	Gly	Leu	Pro	Ser	Gly	Phe	Gln	Asp	Leu	Leu	His	Phe	Val	Leu	
gac	cat	gtg	gaa	gat	aaa	aat	gtg	gaa	act	ctt	ctt	gag	aga	ttg	cta	2612
Asp	His	Val	Glu	Asp	Lys	Asn	Val	Glu	Thr	Leu	Leu	Glu	Arg	Leu	Leu	
gag	gct	cgt	gag	gag	ctt	agg	ccc	ttg	ctt	ctc	aaa	cca	aac	aac	cgt	2660
Glu	Ala	Arg	Glu	Glu	Leu	Arg	Pro	Leu	Leu	Leu	Lys	Pro	Asn	Asn	Arg	
cta	aag	gat	ctg	ctg	ttt	ttg	gac	ata	gca	ctt	gat	tct	aca	gtt	aga	2708
Leu	Lys	Asp	Leu	Leu	Phe	Leu	Asp	Ile	Ala	Leu	Asp	Ser	Thr	Val	Arg	
aca	gca	gta	gaa	agg	gga	tat	gaa	gaa	ttg	aac	aac	gct	aat	cct	gag	2756
Thr	Ala	Val	Glu	Arg	Gly	Tyr	Glu	Glu	Leu	Asn	Asn	Ala	Asn	Pro	Glu	

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870				875				880								
aaa Lys 885	atc Ile	atg Met	tac Tyr	ttc Phe	atc Ile 890	tcc Ser	ctc Leu	gtt Val	ctt Leu	gaa Glu 895	aat Asn	ctc Leu	gca Ala	ctc Leu	tct Ser 900	2804
gtg Val	gac Asp	gat Asp	aat Asn	gaa Glu 905	gat Asp	ctt Leu	gtt Val	tat Tyr	tgc Cys 910	ttg Leu	aag Lys	gga Gly	tgg Trp	aat Asn 915	caa Gln	2852
gct Ala	ctt Leu	tca Ser	atg Met 920	tcc Ser	aat Asn	ggt Gly	ggg Gly	gac Asp 925	aac Asn	cat His	tgg Trp	gct Ala	tta Leu 930	ttt Phe	gca Ala	2900
aaa Lys	gct Ala	gtg Val 935	ctt Leu	gac Asp	aga Arg	acc Thr	cgt Arg 940	ctt Leu	gca Ala	ctt Leu	gca Ala	agc Ser 945	aag Lys	gca Ala	gag Glu	2948
tgg Trp	tac Tyr 950	cat His	cac His	tta Leu	ttg Leu	cag Gln 955	cca Pro	tct Ser	gcc Ala	gaa Glu	tat Tyr 960	cta Leu	gga Gly	tca Ser	ata Ile	2996
ctt Leu 965	ggg Gly	gtg Val	gac Asp	caa Gln	tgg Trp 970	gct Ala	ttg Leu	aac Asn	ata Ile	ttt Phe 975	act Thr	gaa Glu	gaa Glu	att Ile	ata Ile 980	3044
cgt Arg	gct Ala	gga Gly	tca Ser	gca Ala 985	gct Ala	tca Ser	tta Leu	tcc Ser	tct Ser 990	ctt Leu	ctt Leu	aat Asn	aga Arg	ctc Leu 995	gat Asp	3092
ccc Pro	gtg Val	ctt Leu	cgg Arg 1000	aaa Lys	act Thr	gca Ala	aat Asn	cta Leu 1005	gga Gly	agt Ser	tgg Trp	cag Gln	att Ile 1010	atc Ile		3137
agt Ser	cca Pro	gtt Val	gaa Glu 1015	gcc Ala	gtt Val	gga Gly	tat Tyr	gtt Val 1020	gtc Val	gtt Val	gtg Val	gat Asp	gag Glu 1025	ttg Leu		3182
ctt Leu	tca Ser	gtt Val	cag Gln 1030	aat Asn	gaa Glu	atc Ile	tac Tyr	gag Glu 1035	aag Lys	ccc Pro	acg Thr	atc Ile	tta Leu 1040	gta Val		3227
gca Ala	aaa Lys	tct Ser	gtt Val 1045	aaa Lys	gga Gly	gag Glu	gag Glu	gaa Glu 1050	att Ile	cct Pro	gat Asp	ggt Gly	gct Ala 1055	gtt Val		3272
gcc Ala	ctg Leu	ata Ile	aca Thr 1060	cca Pro	gac Asp	atg Met	cca Pro	gat Asp 1065	gtt Val	ctt Leu	tca Ser	cat His	gtt Val 1070	tct Ser		3317
gtt Val	cga Arg	gct Ala	aga Arg 1075	aat Asn	ggg Gly	aag Lys	gtt Val	tgc Cys 1080	ttt Phe	gct Ala	aca Thr	tgc Cys	ttt Phe 1085	gat Asp		3362
ccc Pro	aat Asn	ata Ile	ttg Leu 1090	gct Ala	gac Asp	ctc Leu	caa Gln	gca Ala 1095	aag Lys	gaa Glu	gga Gly	agg Arg	att Ile 1100	ttg Leu		3407
ctc Leu	tta Leu	aag Lys	cct Pro 1105	aca Thr	cct Pro	tca Ser	gac Asp	ata Ile 1110	atc Ile	tat Tyr	agt Ser	gag Glu	gtg Val 1115	aat Asn		3452
gag Glu	att Ile	gag Glu	ctc Leu 1120	caa Gln	agt Ser	tca Ser	agt Ser	aac Asn 1125	ttg Leu	gta Val	gaa Glu	gct Ala	gaa Glu 1130	act Thr		3497
tca Ser	gca Ala	aca Thr	ctt Leu	aga Arg	ttg Leu	gtg Val	aaa Lys	aag Lys	caa Gln	ttt Phe	ggt Gly	ggt Gly	tgt Cys	tac Tyr		3542



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1135				1140				1145							
gca	ata	tca	gca	gat	gaa	ttc	aca	agt	gaa	atg	gtt	gga	gct	aaa	3587
Ala	Ile	Ser	Ala	Asp	Glu	Phe	Thr	Ser	Glu	Met	Val	Gly	Ala	Lys	
1150				1155				1160							
tca	cgt	aat	att	gca	tat	ctg	aaa	gga	aaa	gtg	cct	tcc	tcg	gtg	3632
Ser	Arg	Asn	Ile	Ala	Tyr	Leu	Lys	Gly	Lys	Val	Pro	Ser	Ser	Val	
1165				1170				1175							
gga	att	cct	acg	tca	gta	gct	ctt	cca	ttt	gga	gtc	ttt	gag	aaa	3677
Gly	Ile	Pro	Thr	Ser	Val	Ala	Leu	Pro	Phe	Gly	Val	Phe	Glu	Lys	
1180				1185				1190							
gta	ctt	tca	gac	gac	ata	aat	cag	gga	gtg	gca	aaa	gag	ttg	caa	3722
Val	Leu	Ser	Asp	Asp	Ile	Asn	Gln	Gly	Val	Ala	Lys	Glu	Leu	Gln	
1195				1200				1205							
att	ctg	atg	aaa	aaa	cta	tct	gaa	gga	gac	ttc	agc	gct	ctt	ggc	3767
Ile	Leu	Met	Lys	Lys	Leu	Ser	Glu	Gly	Asp	Phe	Ser	Ala	Leu	Gly	
1210				1215				1220							
gaa	att	cgc	aca	acg	gtt	tta	gat	ctt	tca	gca	cca	gct	caa	ttg	3812
Glu	Ile	Arg	Thr	Thr	Val	Leu	Asp	Leu	Ser	Ala	Pro	Ala	Gln	Leu	
1225				1230				1235							
gtc	aaa	gag	ctg	aag	gag	aag	atg	cag	ggc	tct	ggc	atg	cct	tgg	3857
Val	Lys	Glu	Leu	Lys	Glu	Lys	Met	Gln	Gly	Ser	Gly	Met	Pro	Trp	
1240				1245				1250							
cct	ggc	gat	gaa	ggc	cca	aag	cgg	tgg	gaa	caa	gca	tgg	atg	gcc	3902
Pro	Gly	Asp	Glu	Gly	Pro	Lys	Arg	Trp	Glu	Gln	Ala	Trp	Met	Ala	
1255				1260				1265							
ata	aaa	aag	gtg	tgg	gct	tca	aaa	tgg	aat	gag	aga	gca	tac	ttc	3947
Ile	Lys	Lys	Val	Trp	Ala	Ser	Lys	Trp	Asn	Glu	Arg	Ala	Tyr	Phe	
1270				1275				1280							
agc	aca	agg	aag	gtg	aaa	ctg	gat	cat	gac	tat	ctg	tgc	atg	gct	3992
Ser	Thr	Arg	Lys	Val	Lys	Leu	Asp	His	Asp	Tyr	Leu	Cys	Met	Ala	
1285				1290				1295							
gtc	ctt	gtt	caa	gaa	ata	ata	aat	gct	gat	tat	gca	ttt	gtc	att	4037
Val	Leu	Val	Gln	Glu	Ile	Ile	Asn	Ala	Asp	Tyr	Ala	Phe	Val	Ile	
1300				1305				1310							
cac	aca	acc	aac	cca	tct	tcc	gga	gac	gac	tca	gaa	ata	tat	gcc	4082
His	Thr	Thr	Asn	Pro	Ser	Ser	Gly	Asp	Asp	Ser	Glu	Ile	Tyr	Ala	
1315				1320				1325							
gag	gtg	gtc	agg	ggc	ctt	ggg	gaa	aca	ctt	gtt	gga	gct	tat	cca	4127
Glu	Val	Val	Arg	Gly	Leu	Gly	Glu	Thr	Leu	Val	Gly	Ala	Tyr	Pro	
1330				1335				1340							
gga	cgt	gct	ttg	agt	ttt	atc	tgc	aag	aaa	aag	gat	ctc	aac	tct	4172
Gly	Arg	Ala	Leu	Ser	Phe	Ile	Cys	Lys	Lys	Lys	Asp	Leu	Asn	Ser	
1345				1350				1355							
cct	caa	gtg	tta	ggc	tac	cca	agc	aaa	ccg	atc	ggc	ctt	ttc	ata	4217
Pro	Gln	Val	Leu	Gly	Tyr	Pro	Ser	Lys	Pro	Ile	Gly	Leu	Phe	Ile	
1360				1365				1370							
aaa	aga	tct	atc	atc	ttc	cga	tct	gat	tcc	aat	ggg	gaa	gat	ttg	4262
Lys	Arg	Ser	Ile	Ile	Phe	Arg	Ser	Asp	Ser	Asn	Gly	Glu	Asp	Leu	
1375				1380				1385							
gaa	ggc	tat	gcc	ggc	gct	ggc	ctc	tac	gac	agt	gta	cca	atg	gat	4307
Glu	Gly	Tyr	Ala	Gly	Ala	Gly	Leu	Tyr	Asp	Ser	Val	Pro	Met	Asp	

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 1390 1395 1400

gag gag gaa aaa gtt gta att gat tac tct tcc gac cca ttg ata 4352  
 Glu Glu Glu Lys Val Val Ile Asp Tyr Ser Ser Asp Pro Leu Ile  
 1405 1410 1415

act gat ggt aac ttc cgc cag aca atc ctg tcc aac att gct cgt 4397  
 Thr Asp Gly Asn Phe Arg Gln Thr Ile Leu Ser Asn Ile Ala Arg  
 1420 1425 1430

gct gga cat gct atc gag gag cta tat ggc tct cct caa gac att 4442  
 Ala Gly His Ala Ile Glu Glu Leu Tyr Gly Ser Pro Gln Asp Ile  
 1435 1440 1445

gag ggt gta gtg agg gat gga aag att tat gtc gtt cag aca aga 4487  
 Glu Gly Val Val Arg Asp Gly Lys Ile Tyr Val Val Gln Thr Arg  
 1450 1455 1460

cca cag atg tga ttatattctc gttgtatggt gttcagagaa gaccacagat 4539  
 Pro Gln Met

gtgatcatat tctcattgta tcagatctgt gaccacttac ctgatacctc ccatgaagtt 4599  
 acctgtatga ttatacgtga tccaaagcca tcacatcatg ttcaccttca gctattggag 4659  
 gagaagtgag aagtaggaat tgcaatatga ggaataataa gaaaaacttt gtaaaagcta 4719  
 aattagctgg gtatgatata gggagaaatg tgtaaacatt gtactatata tagtatatac 4779  
 acacgcatta tgtattgcat tatgcactga ataatatcgc agcatcaaag aagaaatcct 4839  
 ttgggtggtt tc 4851

&lt;210&gt; 11

&lt;211&gt; 1464

&lt;212&gt; PRT

&lt;213&gt; Solanum tuberosum

&lt;400&gt; 11

Met Ser Asn Ser Leu Gly Asn Asn Leu Leu Tyr Gln Gly Phe Leu Thr  
 1 5 10 15

Ser Thr Val Leu Glu His Lys Ser Arg Ile Ser Pro Pro Cys Val Gly  
 20 25 30

Gly Asn Ser Leu Phe Gln Gln Gln Val Ile Ser Lys Ser Pro Leu Ser  
 35 40 45

Thr Glu Phe Arg Gly Asn Arg Leu Lys Val Gln Lys Lys Lys Ile Pro  
 50 55 60

Met Glu Lys Lys Arg Ala Phe Ser Ser Ser Pro His Ala Val Leu Thr  
 65 70 75 80

Thr Asp Thr Ser Ser Glu Leu Ala Glu Lys Phe Ser Leu Gly Gly Asn  
 Seite 50

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 85 90 95

Ile Glu Leu Gln Val Asp Val Arg Pro Pro Thr Ser Gly Asp Val Ser  
 100 105 110

Phe Val Asp Phe Gln Val Thr Asn Gly Ser Asp Lys Leu Phe Leu His  
 115 120 125

Trp Gly Ala Val Lys Phe Gly Lys Glu Thr Trp Ser Leu Pro Asn Asp  
 130 135 140

Arg Pro Asp Gly Thr Lys Val Tyr Lys Asn Lys Ala Leu Arg Thr Pro  
 145 150 155 160

Phe Val Lys Ser Gly Ser Asn Ser Ile Leu Arg Leu Glu Ile Arg Asp  
 165 170 175

Thr Ala Ile Glu Ala Ile Glu Phe Leu Ile Tyr Asp Glu Ala His Asp  
 180 185 190

Lys Trp Ile Lys Asn Asn Gly Gly Asn Phe Arg Val Lys Leu Ser Arg  
 195 200 205

Lys Glu Ile Arg Gly Pro Asp Val Ser Val Pro Glu Glu Leu Val Gln  
 210 215 220

Ile Gln Ser Tyr Leu Arg Trp Glu Arg Lys Gly Lys Gln Asn Tyr Pro  
 225 230 235 240

Pro Glu Lys Glu Lys Glu Glu Tyr Glu Ala Ala Arg Thr Val Leu Gln  
 245 250 255

Glu Glu Ile Ala Arg Gly Ala Ser Ile Gln Asp Ile Arg Ala Arg Leu  
 260 265 270

Thr Lys Thr Asn Asp Lys Ser Gln Ser Lys Glu Glu Pro Leu His Val  
 275 280 285

Thr Lys Ser Asp Ile Pro Asp Asp Leu Ala Gln Ala Gln Ala Tyr Ile  
 290 295 300

Arg Trp Glu Lys Ala Gly Lys Pro Asn Tyr Pro Pro Glu Lys Gln Ile  
 305 310 315 320

Glu Glu Leu Glu Glu Ala Arg Arg Glu Leu Gln Leu Glu Leu Glu Lys  
 325 330 335

Gly Ile Thr Leu Asp Glu Leu Arg Lys Thr Ile Thr Lys Gly Glu Ile  
 340 345 350

Lys Thr Lys Val Glu Lys His Leu Lys Arg Ser Ser Phe Ala Val Glu  
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 355 360 365

Arg Ile Gln Arg Lys Lys Arg Asp Phe Gly His Leu Ile Asn Lys Tyr  
 370 375 380

Thr Ser Ser Pro Ala Val Gln Val Gln Lys Val Leu Glu Glu Pro Pro  
 385 390 395 400

Ala Leu Ser Lys Ile Lys Leu Tyr Ala Lys Glu Lys Glu Glu Gln Ile  
 405 410 415

Asp Asp Pro Ile Leu Asn Lys Lys Ile Phe Lys Val Asp Asp Gly Glu  
 420 425 430

Leu Leu Val Leu Val Ala Lys Ser Ser Gly Lys Thr Lys Val His Leu  
 435 440 445

Ala Thr Asp Leu Asn Gln Pro Ile Thr Leu His Trp Ala Leu Ser Lys  
 450 455 460

Ser Pro Gly Glu Trp Met Val Pro Pro Ser Ser Ile Leu Pro Pro Gly  
 465 470 475 480

Ser Ile Ile Leu Asp Lys Ala Ala Glu Thr Pro Phe Ser Ala Ser Ser  
 485 490 495

Ser Asp Gly Leu Thr Ser Lys Val Gln Ser Leu Asp Ile Val Ile Glu  
 500 505 510

Asp Gly Asn Phe Val Gly Met Pro Phe Val Leu Leu Ser Gly Glu Lys  
 515 520 525

Trp Ile Lys Asn Gln Gly Ser Asp Phe Tyr Val Gly Phe Ser Ala Ala  
 530 535 540

Ser Lys Leu Ala Leu Lys Ala Ala Gly Asp Gly Ser Gly Thr Ala Lys  
 545 550 555 560

Ser Leu Leu Asp Lys Ile Ala Asp Met Glu Ser Glu Ala Gln Lys Ser  
 565 570 575

Phe Met His Arg Phe Asn Ile Ala Ala Asp Leu Ile Glu Asp Ala Thr  
 580 585 590

Ser Ala Gly Glu Leu Gly Phe Ala Gly Ile Leu Val Trp Met Arg Phe  
 595 600 605

Met Ala Thr Arg Gln Leu Ile Trp Asn Lys Asn Tyr Asn Val Lys Pro  
 610 615 620

Arg Glu Ile Ser Lys Ala Gln Asp Arg Leu Thr Asp Leu Leu Gln Asn

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 625 630 635 640

Ala Phe Thr Ser His Pro Gln Tyr Arg Glu Ile Leu Arg Met Ile Met  
 645 650 655

Ser Thr Val Gly Arg Gly Gly Glu Gly Asp Val Gly Gln Arg Ile Arg  
 660 665 670

Asp Glu Ile Leu Val Ile Gln Arg Asn Asn Asp Cys Lys Gly Gly Met  
 675 680 685

Met Gln Glu Trp His Gln Lys Leu His Asn Asn Thr Ser Pro Asp Asp  
 690 695 700

Val Val Ile Cys Gln Ala Leu Ile Asp Tyr Ile Lys Ser Asp Phe Asp  
 705 710 715 720

Leu Gly Val Tyr Trp Lys Thr Leu Asn Glu Asn Gly Ile Thr Lys Glu  
 725 730 735

Arg Leu Leu Ser Tyr Asp Arg Ala Ile His Ser Glu Pro Asn Phe Arg  
 740 745 750

Gly Asp Gln Lys Gly Gly Leu Leu Arg Asp Leu Gly His Tyr Met Arg  
 755 760 765

Thr Leu Lys Ala Val His Ser Gly Ala Asp Leu Glu Ser Ala Ile Ala  
 770 775 780

Asn Cys Met Gly Tyr Lys Thr Glu Gly Glu Gly Phe Met Val Gly Val  
 785 790 795 800

Gln Ile Asn Pro Val Ser Gly Leu Pro Ser Gly Phe Gln Asp Leu Leu  
 805 810 815

His Phe Val Leu Asp His Val Glu Asp Lys Asn Val Glu Thr Leu Leu  
 820 825 830

Glu Arg Leu Leu Glu Ala Arg Glu Glu Leu Arg Pro Leu Leu Leu Lys  
 835 840 845

Pro Asn Asn Arg Leu Lys Asp Leu Leu Phe Leu Asp Ile Ala Leu Asp  
 850 855 860

Ser Thr Val Arg Thr Ala Val Glu Arg Gly Tyr Glu Glu Leu Asn Asn  
 865 870 875 880

Ala Asn Pro Glu Lys Ile Met Tyr Phe Ile Ser Leu Val Leu Glu Asn  
 885 890 895

Leu Ala Leu Ser Val Asp Asp Asn Glu Asp Leu Val Tyr Cys Leu Lys  
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 900 905 910

Gly Trp Asn Gln Ala Leu Ser Met Ser Asn Gly Gly Asp Asn His Trp  
 915 920 925

Ala Leu Phe Ala Lys Ala Val Leu Asp Arg Thr Arg Leu Ala Leu Ala  
 930 935 940

Ser Lys Ala Glu Trp Tyr His His Leu Leu Gln Pro Ser Ala Glu Tyr  
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Leu Gly Ser Ile Leu Gly Val Asp Gln Trp Ala Leu Asn Ile Phe Thr  
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Glu Glu Ile Ile Arg Ala Gly Ser Ala Ala Ser Leu Ser Ser Leu Leu  
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Asn Arg Leu Asp Pro Val Leu Arg Lys Thr Ala Asn Leu Gly Ser Trp  
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Gln Ile Ile Ser Pro Val Glu Ala Val Gly Tyr Val Val Val Val  
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Ile Leu Val Ala Lys Ser Val Lys Gly Glu Glu Glu Ile Pro Asp  
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His Val Ser Val Arg Ala Arg Asn Gly Lys Val Cys Phe Ala Thr  
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Cys Phe Asp Pro Asn Ile Leu Ala Asp Leu Gln Ala Lys Glu Gly  
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Arg Ile Leu Leu Leu Lys Pro Thr Pro Ser Asp Ile Ile Tyr Ser  
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Glu Val Asn Glu Ile Glu Leu Gln Ser Ser Ser Asn Leu Val Glu  
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Ala Glu Thr Ser Ala Thr Leu Arg Leu Val Lys Lys Gln Phe Gly  
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Gly Cys Tyr Ala Ile Ser Ala Asp Glu Phe Thr Ser Glu Met Val  
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Gly Ala Lys Ser Arg Asn Ile Ala Tyr Leu Lys Gly Lys Val Pro  
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Phe Glu Lys Val Leu Ser Asp Asp Ile Asn Gln Gly Val Ala Lys  
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Glu Leu Gln Ile Leu Met Lys Lys Leu Ser Glu Gly Asp Phe Ser  
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Ala Leu Gly Glu Ile Arg Thr Thr Val Leu Asp Leu Ser Ala Pro  
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Ala Gln Leu Val Lys Glu Leu Lys Glu Lys Met Gln Gly Ser Gly  
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Met Pro Trp Pro Gly Asp Glu Gly Pro Lys Arg Trp Glu Gln Ala  
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Trp Met Ala Ile Lys Lys Val Trp Ala Ser Lys Trp Asn Glu Arg  
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Ala Tyr Phe Ser Thr Arg Lys Val Lys Leu Asp His Asp Tyr Leu  
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Cys Met Ala Val Leu Val Gln Glu Ile Ile Asn Ala Asp Tyr Ala  
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Phe Val Ile His Thr Thr Asn Pro Ser Ser Gly Asp Asp Ser Glu  
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Ile Tyr Ala Glu Val Val Arg Gly Leu Gly Glu Thr Leu Val Gly  
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Ala Tyr Pro Gly Arg Ala Leu Ser Phe Ile Cys Lys Lys Lys Asp  
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Leu Asn Ser Pro Gln Val Leu Gly Tyr Pro Ser Lys Pro Ile Gly  
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Leu Phe Ile Lys Arg Ser Ile Ile Phe Arg Ser Asp Ser Asn Gly  
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Glu Asp Leu Glu Gly Tyr Ala Gly Ala Gly Leu Tyr Asp Ser Val  
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Pro Met Asp Glu Glu Glu Lys Val Val Ile Asp Tyr Ser Ser Asp  
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Pro Leu Ile Thr Asp Gly Asn Phe Arg Gln Thr Ile Leu Ser Asn

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Glu Arg Cys Ala Leu Gly Leu Gly Val His Ala Arg Pro Ala Ser Pro	
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Ser Pro Ala Leu Leu Pro Pro Ala Ala Leu Arg Arg Gly Arg Arg Leu	
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Pro Ala Ala Thr Thr Thr Leu Ala Val Ser Arg Arg Ser Leu Leu Ala	
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Pro Arg Ala Ile Ala Ala Ser Thr Gly Arg Ala Ser Pro Gly Leu Val	
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gga agg ttc acc ctg gat gcc aac tcc gag ctt aag gtg aca ttg aac	292
Gly Arg Phe Thr Leu Asp Ala Asn Ser Glu Leu Lys Val Thr Leu Asn	
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Thr	Ser	Gly	Ser	Leu	Ile	Leu	His	Trp	Gly	Ala	Leu	Arg	Pro	Asp	Arg	
		110					115					120				
gga	gaa	tgg	ctc	cta	cca	tcc	cgg	aaa	cca	gat	ggc	acg	aca	gtg	tac	436
Gly	Glu	Trp	Leu	Leu	Pro	Ser	Arg	Lys	Pro	Asp	Gly	Thr	Thr	Val	Tyr	
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Lys	Asn	Arg	Ala	Leu	Arg	Thr	Pro	Phe	Ile	Lys	Ser	Gly	Asp	Asn	Ser	
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Leu	Ile	Phe	Asp	Glu	Ala	Arg	Asn	Asn	Trp	Tyr	Lys	Asn	Asn	Gly	Gln	
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Asn	Phe	Gln	Ile	Gln	Leu	Gln	Ala	Ser	Gln	Tyr	Gln	Gly	Gln	Gly	Thr	
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Ser	Thr	Ala	Thr	Ser	Ser	Thr	Val	Val	Pro	Glu	Asp	Leu	Val	Gln	Ile	
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Glu	Gln	Glu	Lys	Glu	Glu	Tyr	Glu	Ala	Ala	Arg	Thr	Glu	Leu	Ile	Glu	
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Glu	Leu	Asn	Lys	Gly	Val	Ser	Leu	Glu	Lys	Leu	Arg	Ala	Lys	Leu	Thr	
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Lys	Thr	Pro	Glu	Ala	Thr	Asp	Ser	Asn	Ala	Pro	Ala	Ser	Glu	Ser	Thr	
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Val	Thr	Thr	Lys	Val	Pro	Glu	Glu	Leu	Val	Gln	Val	Gln	Ala	Tyr	Ile	
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Arg	Trp	Glu	Lys	Ala	Gly	Lys	Pro	Asn	Tyr	Ala	Pro	Glu	Lys	Gln	Leu	
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gtc	gag	ttt	gag	gaa	gca	agg	aag	gaa	ctg	cag	tct	gag	ttg	gat	aag	1012
Val	Glu	Phe	Glu	Ala	Ala	Arg	Lys	Glu	Leu	Gln	Ser	Glu	Leu	Asp	Lys	
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Gly	Thr	Ser	Val	Glu	Gln	Leu	Arg	Asn	Lys	Ile	Leu	Lys	Gly	Asn	Ile	
			335					340					345			
gag	aca	aaa	gtt	tcc	aag	cag	ctg	aag	gac	aaa	aaa	tac	ttt	tct	gtg	1108
Glu	Thr	Lys	Val	Ser	Lys	Gln	Leu	Lys	Asp	Lys	Lys	Tyr	Phe	Ser	Val	
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cac His 380	aag Lys	cct Pro	act Thr	gtt Val	atg Met 385	gaa Glu	gcg Ala	caa Gln	gta Val	gag Glu 390	act Thr	cct Pro	aaa Lys	caa Gln	ccc Pro 395	1204
act Thr	gtt Val	ctg Leu	gat Asp	ctc Leu 400	ttc Phe	aca Thr	aag Lys	tca Ser	tta Leu 405	cag Gln	gag Glu	cag Gln	gat Asp	aac Asn 410	tgt Cys	1252
gag Glu	gtt Val	cta Leu	agc Ser 415	aga Arg	aag Lys	ctt Leu	ttc Phe	aag Lys 420	ttc Phe	ggt Gly	gac Asp	aag Lys	gag Glu 425	ata Ile	ctg Leu	1300
gga Gly	att Ile	acc Thr 430	acc Thr	gtt Val	gct Ala	cta Leu	gga Gly 435	aaa Lys	acc Thr	aaa Lys	gtt Val	cac His 440	ttg Leu	gca Ala	aca Thr	1348
aac Asn	tat Tyr 445	atg Met	gag Glu	cca Pro	ctt Leu	ata Ile 450	ctt Leu	cac His	tgg Trp	gcg Ala	ttg Leu 455	tca Ser	aaa Lys	gag Glu	aat Asn	1396
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ttg Leu	cta Leu	gac Asp	aag Lys	gca Ala 480	tgt Cys	gaa Glu	act Thr	tca Ser	ttc Phe 485	agt Ser	gaa Glu	tat Tyr	gaa Glu	ttg Leu 490	aat Asn	1492
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tta Leu	ttg Leu	ggt Gly 590	att Ile	att Ile	gga Gly	att Ile	ttt Phe 595	gtt Val	tgg Trp	att Ile	ggg Gly	ttc Phe 600	atg Met	gct Ala	aca Thr	1828
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gag	aaa	att	atg	tac	ttc	atc	agt	ctt	gtc	ctt	gaa	aat	ctt	gct	tta		2692
Glu	Lys	Ile	Met	Tyr	Phe	Ile	Ser	Leu	Val	Leu	Glu	Asn	Leu	Ala	Leu		
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gaa caa tac tat aat ttg atg cag ccc tca gct gaa tat ctt ggc tcg	Glu Gln Tyr Tyr Asn Leu Met Gln Pro Ser Ala Glu Tyr Leu Gly Ser	940	945	950												2884
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ggc Gly	gaa Glu 1215	ata Ile	cgg Arg	aaa Lys	act Thr	gtt Val 1220	ctc Leu	aat Asn	tta Leu	act Thr	gct Ala 1225	cct Pro	act Thr	caa Gln	3703
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tgg Trp	cct Pro 1245	gga Gly	gat Asp	gaa Glu	ggt Gly	gac Asp 1250	caa Gln	cgt Arg	tgg Trp	gag Glu	caa Gln 1255	gca Ala	tgg Trp	atg Met	3793
gca Ala	att Ile 1260	aaa Lys	aag Lys	gtt Val	tgg Trp	gcg Ala 1265	tca Ser	aaa Lys	tgg Trp	aat Asn	gaa Glu 1270	aga Arg	gca Ala	tat Tyr	3838
ttt Phe	agc Ser 1275	act Thr	cgt Arg	aag Lys	gtg Val	aag Lys 1280	ctt Leu	gat Asp	cat His	gac Asp	tac Tyr 1285	ctt Leu	tcc Ser	atg Met	3883
gct Ala	gta Val 1290	ctt Leu	gta Val	caa Gln	gaa Glu	att Ile 1295	gtc Val	aat Asn	gca Ala	gac Asp	tat Tyr 1300	gcc Ala	ttt Phe	gtc Val	3928
att Ile	cat His 1305	act Thr	act Thr	aac Asn	cca Pro	tca Ser 1310	tcg Ser	gga Gly	gat Asp	tcg Ser	tct Ser 1315	gag Glu	ata Ile	tat Tyr	3973
gct Ala	gaa Glu 1320	gtg Val	gtg Val	aaa Lys	ggg Gly	ctt Leu 1325	gga Gly	gaa Glu	aca Thr	ctt Leu	gta Val 1330	gga Gly	gcc Ala	tat Tyr	4018
cct Pro	ggt Gly 1335	cgc Arg	gcc Ala	atg Met	agc Ser	ttt Phe 1340	gta Val	tgt Cys	aag Lys	aaa Lys	aac Asn 1345	gac Asp	ctt Leu	gac Asp	4063
tct Ser	ccc Pro 1350	aag Lys	gta Val	ctg Leu	ggt Gly	ttc Phe 1355	cca Pro	agc Ser	aag Lys	cca Pro	att Ile 1360	ggg Gly	gtc Val	ttc Phe	4108
ata Ile	aag Lys 1365	aga Arg	tca Ser	atc Ile	atc Ile	ttt Phe 1370	cgt Arg	tcg Ser	gat Asp	tcc Ser	aac Asn 1375	ggg Gly	gag Glu	gat Asp	4153
tta Leu	gaa Glu 1380	ggg Gly	tat Tyr	gct Ala	gga Gly	gca Ala 1385	aga Arg	ctg Leu	tat Tyr	gat Asp	agt Ser 1390	gtc Val	cct Pro	atg Met	4198
gat Asp	gag Glu 1395	gaa Glu	gat Asp	gaa Glu	gtc Val	ata Ile 1400	gtc Val	gac Asp	tac Tyr	aac Asn	aac Asn 1405	gga Gly	ccc Pro	ctc Leu	4243
att Ile	aca Thr 1410	gat Asp	cag Gln	gga Gly	ttc Phe	caa Gln 1415	aaa Lys	tcc Ser	aac Asn	ctc Leu	ccg Pro 1420	agc Ser	att Ile	gca Ala	4288

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ccg gct ggt cat gcc att gag gag ctt tat ggg tcc cca cag gat 4333
Pro Ala Gly His Ala Ile Glu Glu Leu Tyr Gly Ser Pro Gln Asp
    1425                1430                1435

ggt gag ggt gca gtg aag gaa ggg aag cta tac gta gta cag aca 4378
Val Glu Gly Ala Val Lys Glu Gly Lys Leu Tyr Val Val Gln Thr
    1440                1445                1450

aga cca cag atg taa tctatatgta ttttttatag ccaagtcaat caggcaatgt 4433
Arg Pro Gln Met
    1455

tgtagagtaa gatatacggg ccgtgggaca tgtataacac gttacgccct tttttttatt 4493
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aaaaaaaaaga aaaaaaaaaaa aaa 4576

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&lt;210&gt; 13

&lt;211&gt; 1457

&lt;212&gt; PRT

&lt;213&gt; Oryza sativa

&lt;400&gt; 13

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Gly Leu Gly Val His Ala Arg Pro Ala Ser Pro Ser Pro Ala Leu Leu  
 20 25 30

Pro Pro Ala Ala Leu Arg Arg Gly Arg Arg Leu Pro Ala Ala Thr Thr  
 35 40 45

Thr Leu Ala Val Ser Arg Arg Ser Leu Leu Ala Pro Arg Ala Ile Ala  
 50 55 60

Ala Ser Thr Gly Arg Ala Ser Pro Gly Leu Val Gly Arg Phe Thr Leu  
 65 70 75 80

Asp Ala Asn Ser Glu Leu Lys Val Thr Leu Asn Pro Ala Pro Gln Gly  
 85 90 95

Ser Val Val Glu Ile Asn Leu Glu Ala Thr Asn Thr Ser Gly Ser Leu  
 100 105 110

Ile Leu His Trp Gly Ala Leu Arg Pro Asp Arg Gly Glu Trp Leu Leu  
 115 120 125

Pro Ser Arg Lys Pro Asp Gly Thr Thr Val Tyr Lys Asn Arg Ala Leu  
 130 135 140

Arg Thr Pro Phe Ile Lys Ser Gly Asp Asn Ser Thr Leu Lys Ile Glu

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145 150 155 160

Ile Asp Asp Pro Ala Val Gln Ala Ile Glu Phe Leu Ile Phe Asp Glu  
165 170 175

Ala Arg Asn Asn Trp Tyr Lys Asn Asn Gly Gln Asn Phe Gln Ile Gln  
180 185 190

Leu Gln Ala Ser Gln Tyr Gln Gly Gln Gly Thr Ser Thr Ala Thr Ser  
195 200 205

Ser Thr Val Val Pro Glu Asp Leu Val Gln Ile Gln Ser Tyr Leu Arg  
210 215 220

Trp Glu Arg Lys Gly Lys Gln Ser Tyr Thr Pro Glu Gln Glu Lys Glu  
225 230 235 240

Glu Tyr Glu Ala Ala Arg Thr Glu Leu Ile Glu Glu Leu Asn Lys Gly  
245 250 255

Val Ser Leu Glu Lys Leu Arg Ala Lys Leu Thr Lys Thr Pro Glu Ala  
260 265 270

Thr Asp Ser Asn Ala Pro Ala Ser Glu Ser Thr Val Thr Thr Lys Val  
275 280 285

Pro Glu Glu Leu Val Gln Val Gln Ala Tyr Ile Arg Trp Glu Lys Ala  
290 295 300

Gly Lys Pro Asn Tyr Ala Pro Glu Lys Gln Leu Val Glu Phe Glu Glu  
305 310 315 320

Ala Arg Lys Glu Leu Gln Ser Glu Leu Asp Lys Gly Thr Ser Val Glu  
325 330 335

Gln Leu Arg Asn Lys Ile Leu Lys Gly Asn Ile Glu Thr Lys Val Ser  
340 345 350

Lys Gln Leu Lys Asp Lys Lys Tyr Phe Ser Val Glu Arg Ile Gln Arg  
355 360 365

Lys Lys Arg Asp Ile Val Gln Leu Leu Lys Lys His Lys Pro Thr Val  
370 375 380

Met Glu Ala Gln Val Glu Thr Pro Lys Gln Pro Thr Val Leu Asp Leu  
385 390 395 400

Phe Thr Lys Ser Leu Gln Glu Gln Asp Asn Cys Glu Val Leu Ser Arg  
405 410 415

Lys Leu Phe Lys Phe Gly Asp Lys Glu Ile Leu Gly Ile Thr Thr Val

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 420 425 430

Ala Leu Gly Lys Thr Lys Val His Leu Ala Thr Asn Tyr Met Glu Pro  
 435 440 445

Leu Ile Leu His Trp Ala Leu Ser Lys Glu Asn Gly Glu Trp Gln Ala  
 450 455 460

Pro Pro Ser Ser Ile Leu Pro Ser Gly Ser Ser Leu Leu Asp Lys Ala  
 465 470 475 480

Cys Glu Thr Ser Phe Ser Glu Tyr Glu Leu Asn Gly Leu His Cys Gln  
 485 490 495

Val Val Glu Ile Glu Leu Asp Asp Gly Gly Tyr Lys Arg Met Pro Phe  
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Val Leu Arg Ser Gly Glu Thr Trp Met Lys Asn Asn Gly Ser Asp Phe  
 515 520 525

Tyr Leu Asp Phe Ser Thr Lys Val Ala Lys Asn Thr Lys Asp Thr Gly  
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Asp Ala Gly Lys Gly Thr Ala Glu Ala Leu Leu Glu Arg Ile Ala Asp  
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Leu Glu Glu Asp Ala Gln Arg Ser Leu Met His Arg Phe Asn Ile Ala  
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Ala Asp Leu Val Asp Gln Ala Arg Asp Asn Gly Leu Leu Gly Ile Ile  
 580 585 590

Gly Ile Phe Val Trp Ile Gly Phe Met Ala Thr Arg Gln Leu Ile Trp  
 595 600 605

Asn Lys Asn Tyr Asn Val Lys Pro Arg Glu Ile Ser Lys Ala Gln Asp  
 610 615 620

Arg Phe Thr Asp Asp Leu Glu Asn Met Tyr Arg Thr Tyr Pro Gln Tyr  
 625 630 635 640

Gln Glu Ile Leu Arg Met Ile Met Ser Ala Val Gly Arg Gly Gly Glu  
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Gly Asp Val Gly Gln Arg Ile Arg Asp Glu Ile Leu Val Ile Gln Arg  
 660 665 670

Asn Asn Asp Cys Lys Gly Gly Met Met Glu Glu Trp His Gln Lys Leu  
 675 680 685

His Asn Asn Thr Ser Pro Asp Asp Val Val Ile Cys Gln Ala Leu Leu  
 690 695



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 690 695 700

Asp Tyr Ile Lys Ser Asp Phe Asp Thr Gly Val Tyr Trp Asp Thr Leu  
 705 710 715 720

Lys Lys Gly Gly Ile Thr Lys Glu Arg Leu Leu Ser Tyr Asp Arg Pro  
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Ile His Ser Glu Pro Asn Phe Arg Ser Glu Gln Lys Asp Ser Leu Leu  
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Arg Asp Leu Gly Asn Tyr Met Arg Ser Leu Lys Ala Val His Ser Gly  
 755 760 765

Ala Asp Leu Glu Ser Ala Ile Ala Thr Cys Met Gly Tyr Lys Ser Glu  
 770 775 780

Gly Glu Gly Phe Met Val Gly Val Gln Ile Asn Pro Val Lys Gly Leu  
 785 790 795 800

Pro Ser Gly Phe Pro Lys Leu Leu Glu Phe Ile Leu Asp His Val Glu  
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Asp Lys Ser Ala Arg Pro Leu Leu Gly Gly Leu Leu Glu Ala Arg Ala  
 820 825 830

Glu Leu His Pro Leu Leu Leu Gly Ser Pro Glu Arg Met Lys Asp Leu  
 835 840 845

Ile Phe Leu Asp Ile Ala Leu Asp Ser Thr Phe Arg Thr Ala Val Glu  
 850 855 860

Arg Ser Tyr Glu Glu Leu Asn Asn Val Glu Pro Glu Lys Ile Met Tyr  
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Phe Ile Ser Leu Val Leu Glu Asn Leu Ala Leu Ser Thr Asp Asp Asn  
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Glu Asp Ile Leu Tyr Cys Leu Lys Gly Trp Asn Gln Ala Val Glu Met  
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Ala Lys Gln Lys Asn Asn Gln Trp Ala Leu Tyr Ala Lys Ala Phe Leu  
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Asp Arg Thr Arg Leu Ala Leu Ala Ser Lys Gly Glu Gln Tyr Tyr Asn  
 930 935 940

Leu Met Gln Pro Ser Ala Glu Tyr Leu Gly Ser Leu Leu Asn Ile Asp  
 945 950 955 960

Gln Trp Ala Val Asn Ile Phe Thr Glu Glu Ile Ile Arg Gly Gly Ser  
 965

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 965 970 975

Ala Ala Thr Leu Ser Ala Leu Leu Asn Arg Ile Asp Pro Val Leu Arg  
 980 985 990

Asn Val Ala Gln Leu Gly Ser Trp Gln Val Ile Ser Pro Val Glu Val  
 995 1000 1005

Ser Gly Tyr Ile Val Val Val Asp Glu Leu Leu Ala Val Gln Asn  
 1010 1015 1020

Lys Ser Tyr Asp Lys Pro Thr Ile Leu Val Ala Lys Ser Val Lys  
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Gly Glu Glu Glu Ile Pro Asp Gly Val Val Gly Val Ile Thr Pro  
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Asp Met Pro Asp Val Leu Ser His Val Ser Val Arg Ala Arg Asn  
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Cys Lys Val Leu Phe Ala Thr Cys Phe Asp Pro Asn Thr Leu Ser  
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Glu Leu Gln Gly His Asp Gly Lys Val Phe Ser Phe Lys Pro Thr  
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Ser Ala Asp Ile Thr Tyr Arg Glu Ile Pro Glu Ser Glu Leu Gln  
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Ser Gly Ser Leu Asn Ala Glu Ala Gly Gln Ala Val Pro Ser Val  
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Ser Leu Val Lys Lys Lys Phe Leu Gly Lys Tyr Ala Ile Ser Ala  
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Glu Glu Phe Ser Glu Glu Met Val Gly Ala Lys Ser Arg Asn Val  
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Ala Tyr Leu Lys Gly Lys Val Pro Ser Trp Val Gly Val Pro Thr  
 1160 1165 1170

Ser Val Ala Ile Pro Phe Gly Thr Phe Glu Lys Val Leu Ser Asp  
 1175 1180 1185

Glu Ile Asn Lys Glu Val Ala Gln Thr Ile Gln Met Leu Lys Gly  
 1190 1195 1200

Lys Leu Ala Gln Asp Asp Phe Ser Ala Leu Gly Glu Ile Arg Lys  
 1205 1210 1215

Thr Val Leu Asn Leu Thr Ala Pro Thr Gln Leu Ile Lys Glu Leu  
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BCS 04-5003-PCT\_Erhöhte Akt. OK1 & R1\_SEQUENZPROTOKOLL.ST25  
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Lys Glu Lys Met Leu Gly Ser Gly Met Pro Trp Pro Gly Asp Glu  
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Gly Asp Gln Arg Trp Glu Gln Ala Trp Met Ala Ile Lys Lys Val  
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Trp Ala Ser Lys Trp Asn Glu Arg Ala Tyr Phe Ser Thr Arg Lys  
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Val Lys Leu Asp His Asp Tyr Leu Ser Met Ala Val Leu Val Gln  
 1280 1285 1290

Glu Ile Val Asn Ala Asp Tyr Ala Phe Val Ile His Thr Thr Asn  
 1295 1300 1305

Pro Ser Ser Gly Asp Ser Ser Glu Ile Tyr Ala Glu Val Val Lys  
 1310 1315 1320

Gly Leu Gly Glu Thr Leu Val Gly Ala Tyr Pro Gly Arg Ala Met  
 1325 1330 1335

Ser Phe Val Cys Lys Lys Asn Asp Leu Asp Ser Pro Lys Val Leu  
 1340 1345 1350

Gly Phe Pro Ser Lys Pro Ile Gly Val Phe Ile Lys Arg Ser Ile  
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Ile Phe Arg Ser Asp Ser Asn Gly Glu Asp Leu Glu Gly Tyr Ala  
 1370 1375 1380

Gly Ala Arg Leu Tyr Asp Ser Val Pro Met Asp Glu Glu Asp Glu  
 1385 1390 1395

Val Ile Val Asp Tyr Asn Asn Gly Pro Leu Ile Thr Asp Gln Gly  
 1400 1405 1410

Phe Gln Lys Ser Asn Leu Pro Ser Ile Ala Pro Ala Gly His Ala  
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Lys Glu Gly Lys Leu Tyr Val Val Gln Thr Arg Pro Gln Met  
 1445 1450 1455

<210> 14

<211> 4745

<212> DNA

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&lt;213&gt; Glycine max

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (103)..(4482)

&lt;223&gt;

&lt;300&gt;

&lt;308&gt; NCBI / AR400815

&lt;309&gt; 2003-12-18

&lt;400&gt; 14

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ccgattcaac gcaacaaagt gataaagtgt ggatccggga ag atg agc cag agt 114  
Met Ser Gln Ser  
1atc ttc cac cag acg gtg ctt tgt caa acg caa acg gtt gcg gag cat 162  
Ile Phe His Gln Thr Val Leu Cys Gln Thr Gln Thr Val Ala Glu His  
5 10 15 20caa agt aag gtt agt tcc ttg gag gtg agt gcg aac aaa gga aag aag 210  
Gln Ser Lys Val Ser Ser Leu Glu Val Ser Ala Asn Lys Gly Lys Lys  
25 30 35aac ctc ttt ttg gct cct aca aat ttt cgc ggg agc agg ctg tgt gtg 258  
Asn Leu Phe Leu Ala Pro Thr Asn Phe Arg Gly Ser Arg Leu Cys Val  
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Arg Lys Arg Lys Leu Thr Met Gly Arg His His His Arg His Val Asp  
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Ala Val Pro Arg Ala Val Leu Thr Thr Asn Leu Ala Ser Glu Leu Ser  
70 75 80ggg aag ttc aac ctt gac gga aat att gag ttg cag att gct gtt agt 402  
Gly Lys Phe Asn Leu Asp Gly Asn Ile Glu Leu Gln Ile Ala Val Ser  
85 90 95 100tct tca gaa cca gga gct gca aga caa gta gat ttt aag gtt tca tat 450  
Ser Ser Glu Pro Gly Ala Ala Arg Gln Val Asp Phe Lys Val Ser Tyr  
105 110 115aat agt gag tct ctg ctt tta cat tgg gga gtt gtg cgt gat cag cca 498  
Asn Ser Glu Ser Leu Leu Leu His Trp Gly Val Val Arg Asp Gln Pro  
120 125 130ggg aag tgg gtt ctt cct tct cgt cac cca gat gga act aaa aat tat 546  
Gly Lys Trp Val Leu Pro Ser Arg His Pro Asp Gly Thr Lys Asn Tyr  
135 140 145aag agc aga gct ctt aga act cct ttt gtg aaa tcc gac tca gga tct 594  
Lys Ser Arg Ala Leu Arg Thr Pro Phe Val Lys Ser Asp Ser Gly Ser

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ttc Phe 165	ctt Leu	aaa Lys	ata Ile	gaa Glu	att Ile 170	gac Asp	gat Asp	cct Pro	gct Ala	gca Ala 175	caa Gln	gcc Ala	att Ile	gag Glu	ttc Phe 180	642
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tca Ser	gtt Val	cct Pro 215	gaa Glu	gac Asp	ctt Leu	gta Val	cag Gln 220	att Ile	caa Gln	gca Ala	tat Tyr	ctt Leu 225	agg Arg	tgg Trp	gaa Glu	786
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gaa Glu 245	gca Ala	gct Ala	cgg Arg	aat Asn	gaa Glu 250	cta Leu	ttg Leu	gag Glu	gaa Glu	gta Val 255	gcc Ala	agg Arg	ggt Gly	act Thr	tct Ser 260	882
gtg Val	cga Arg	gat Asp	ctc Leu	cat His 265	gca Ala	agg Arg	tta Leu	act Thr	aag Lys 270	aaa Lys	act Thr	aaa Lys	gct Ala	gcc Ala 275	gaa Glu	930
gta Val	aag Lys	gag Glu	cct Pro 280	tct Ser	gtt Val	tct Ser	gaa Glu	aca Thr 285	aag Lys	acc Thr	atc Ile	cct Pro	gat Asp 290	gaa Glu	ctt Leu	978
gta Val	cag Gln	att Ile 295	caa Gln	gct Ala	ttt Phe	ata Ile	cga Arg 300	tgg Trp	gaa Glu	aaa Lys	gct Ala	ggg Gly 305	aag Lys	cct Pro	aac Asn	1026
tac Tyr	tct Ser 310	cgg Arg	gaa Glu	caa Gln	caa Gln	ctt Leu 315	atg Met	gaa Glu	ttt Phe	gag Glu	gaa Glu 320	gca Ala	aga Arg	aaa Lys	gaa Glu	1074
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gca Ala 405	agg Arg	gaa Glu	gaa Glu	tat Tyr	gaa Glu 410	agt Ser	ggt Gly	cct Pro	gtt Val	ttg Leu 415	aat Asn	aag Lys	aca Thr	ata Ile	tac Tyr 420	1362
aag Lys	ctt Leu	ggt Gly	gat Asp	aat Asn	tat Tyr	ctt Leu	ctg Leu	gtc Val	ctt Leu	gtt Val	acc Thr	aag Lys	gat Asp	gct Ala	ggc Gly	1410

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Lys	Ile	Lys	Val	His	Leu	Ala	Thr	Asp	Ser	Lys	Lys	Pro	Phe	Thr	Leu	
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His	Trp	Ala	Leu	Ser	Arg	Thr	Ser	Glu	Glu	Trp	Leu	Val	Pro	Pro	Glu	
		455					460					465				
act	gct	ctg	ccc	cct	gga	tct	ggt	act	atg	aat	gag	gcc	gct	gaa	aca	1554
Thr	Ala	Leu	Pro	Pro	Gly	Ser	Val	Thr	Met	Asn	Glu	Ala	Ala	Glu	Thr	
	470					475					480					
cct	ttc	aaa	gct	ggt	tct	tcg	tct	cat	cct	tct	tat	gag	gtc	cag	tcc	1602
Pro	Phe	Lys	Ala	Gly	Ser	Ser	Ser	His	Pro	Ser	Tyr	Glu	Val	Gln	Ser	
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ttg	gat	ata	gag	ggt	gat	gat	gat	act	ttt	aaa	gga	ata	cct	ttt	gtc	1650
Leu	Asp	Ile	Glu	Val	Asp	Asp	Asp	Thr	Phe	Lys	Gly	Ile	Pro	Phe	Val	
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Ile	Leu	Ser	Asp	Gly	Glu	Trp	Ile	Lys	Asn	Asn	Gly	Ser	Asn	Phe	Tyr	
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Lys	Gly	Thr	Ala	Lys	Phe	Leu	Leu	Asn	Lys	Ile	Ala	Glu	Met	Glu	Ser	
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Tyr	Asn	Val	Lys	Pro	Arg	Glu	Ile	Ser	Lys	Ala	Gln	Asp	Arg	Leu	Thr	
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gtg	agg	atg	atc	ttg	tcc	act	ggt	ggt	cgt	gga	ggt	gaa	gga	gat	gtc	2082
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Gly	Gln	Arg	Ile	Arg	Asp	Glu	Ile	Leu	Val	Ile	Gln	Arg	Asn	Asn	Asp	
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	710					715					720					
aga	ata	aca	aaa	gag	cgg	ctt	ctg	agc	tat	gac	cgt	gcc	atc	cat	tct	2322
Arg	Ile	Thr	Lys	Glu	Arg	Leu	Leu	Ser	Tyr	Asp	Arg	Ala	Ile	His	Ser	
725				730						735					740	
gaa	cca	aat	ttt	agg	aga	gat	cag	aag	gaa	ggt	ctt	ctg	cga	gat	ctg	2370
Glu	Pro	Asn	Phe	Arg	Arg	Asp	Gln	Lys	Glu	Gly	Leu	Leu	Arg	Asp	Leu	
				745					750					755		
gga	aac	tac	atg	agg	act	tta	aag	gca	gtt	cat	tcc	ggt	gca	gat	ctt	2418
Gly	Asn	Tyr	Met	Arg	Thr	Leu	Lys	Ala	Val	His	Ser	Gly	Ala	Asp	Leu	
			760					765					770			
gaa	tct	gct	att	tca	aat	tgt	atg	ggc	tac	aaa	tct	gag	ggt	cag	ggc	2466
Glu	Ser	Ala	Ile	Ser	Asn	Cys	Met	Gly	Tyr	Lys	Ser	Glu	Gly	Gln	Gly	
		775				780						785				
ttc	atg	gta	ggg	gtg	aag	ata	aat	cca	gtg	ccg	ggt	ttg	cct	act	ggt	2514
Phe	Met	Val	Gly	Val	Lys	Ile	Asn	Pro	Val	Pro	Gly	Leu	Pro	Thr	Gly	
	790					795					800					
ttt	cca	gaa	tta	ctt	gag	ttt	gtc	atg	gaa	cac	gtt	gaa	gag	aag	aat	2562
Phe	Pro	Glu	Leu	Leu	Glu	Phe	Val	Met	Glu	His	Val	Glu	Glu	Lys	Asn	
805					810					815					820	
gtt	gaa	cca	ctt	ctt	gag	ggg	ttg	ctt	gag	gct	cgt	cag	gaa	ctc	caa	2610
Val	Glu	Pro	Leu	Leu	Glu	Gly	Leu	Leu	Glu	Ala	Arg	Gln	Glu	Leu	Gln	
				825					830					835		
cca	tca	ctc	agt	aaa	tcc	caa	agt	cgt	ctg	aaa	gat	ctt	ata	ttt	ttg	2658
Pro	Ser	Leu	Ser	Lys	Ser	Gln	Ser	Arg	Leu	Lys	Asp	Leu	Ile	Phe	Leu	
			840					845					850			
gat	gtt	gcc	ctt	gat	tct	aca	gtt	aga	aca	gca	gtg	gaa	agg	agt	tat	2706
Asp	Val	Ala	Leu	Asp	Ser	Thr	Val	Arg	Thr	Ala	Val	Glu	Arg	Ser	Tyr	
		855					860					865				
gag	gaa	tta	aac	aat	gct	gga	cct	gag	aaa	ata	atg	tac	ttc	att	agc	2754
Glu	Glu	Leu	Asn	Asn	Ala	Gly	Pro	Glu	Lys	Ile	Met	Tyr	Phe	Ile	Ser	
	870					875					880					
ttg	gtt	ctt	gaa	aat	ctc	gca	ctt	tca	tcg	gat	gac	aat	gaa	gat	ctt	2802
Leu	Val	Leu	Glu	Asn	Leu	Ala	Leu	Ser	Ser	Asp	Asp	Asn	Glu	Asp	Leu	
885					890					895					900	
atc	tac	tgt	ttg	aag	gga	tgg	gat	gtt	gcc	tta	agc	atg	tgc	aag	att	2850
Ile	Tyr	Cys	Leu	Lys	Gly	Trp	Asp	Val	Ala	Leu	Ser	Met	Cys	Lys	Ile	
				905					910					915		
aaa	gat	act	cat	tgg	gca	ttg	tac	gca	aaa	tca	gtc	ctt	gac	aga	acc	2898
Lys	Asp	Thr	His	Trp	Ala	Leu	Tyr	Ala	Lys	Ser	Val	Leu	Asp	Arg	Thr	
			920					925					930			
cgt	ctt	gca	cta	aca	aac	aag	gct	cat	tta	tac	cag	gaa	att	ctg	caa	2946
Arg	Leu	Ala	Leu	Thr	Asn	Lys	Ala	His	Leu	Tyr	Gln	Glu	Ile	Leu	Gln	
		935					940					945				
cca	tcg	gca	gaa	tat	ctt	gga	tca	ctg	ctt	ggc	gtg	gac	aaa	tgg	gcc	2994
Pro	Ser	Ala	Glu	Tyr	Leu	Gly	Ser	Leu	Leu	Gly	Val	Asp	Lys	Trp	Ala	
	950					955					960					
gtg	gaa	ata	ttt	act	gaa	gaa	att	atc	cgt	gct	gga	tct	gct	gct	tct	3042
Val	Glu	Ile	Phe	Thr	Glu	Glu	Ile	Ile	Arg	Ala	Gly	Ser	Ala	Ala	Ser	

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965	970					975					980						
ttg tct act ctt cta aat cga ctg gat cct gtg ctc cga aag aca gct	Leu Ser Thr Leu Leu Asn Arg Leu Asp Pro Val Leu Arg Lys Thr Ala																3090
			985					990					995				
cat ctt gga agc tgg cag gtt att agt cca gtt gaa act gtt gga	His Leu Gly Ser Trp Gln Val Ile Ser Pro Val Glu Thr Val Gly		1000				1005					1010					3135
tat gtt gag gtt gta gat gag ttg ctt act gtt caa aac aaa tca	Tyr Val Glu Val Val Asp Glu Leu Leu Thr Val Gln Asn Lys Ser		1015				1020					1025					3180
tat gag cga cct aca att ttg ata gcc aat agt gtg aaa gga gag	Tyr Glu Arg Pro Thr Ile Leu Ile Ala Asn Ser Val Lys Gly Glu		1030				1035					1040					3225
gaa gaa att cca gat ggt aca gtt gct gtc ctg aca cct gat atg	Glu Glu Ile Pro Asp Gly Thr Val Ala Val Leu Thr Pro Asp Met		1045				1050					1055					3270
cct gat gtc cta tcc cat gtt tct gta cga gca aga aat agc aag	Pro Asp Val Leu Ser His Val Ser Val Arg Ala Arg Asn Ser Lys		1060				1065					1070					3315
gtg tgt ttt gct aca tgc ttt gat ccc aat atc ctg gct aac ctc	Val Cys Phe Ala Thr Cys Phe Asp Pro Asn Ile Leu Ala Asn Leu		1075				1080					1085					3360
caa gaa tat aaa gga aag ctt tta cgc tta aag cct aca tct gct	Gln Glu Tyr Lys Gly Lys Leu Leu Arg Leu Lys Pro Thr Ser Ala		1090				1095					1100					3405
gat gta gtt tat agt gag gtg aag gag ggt gag ttt att gat gac	Asp Val Val Tyr Ser Glu Val Lys Glu Gly Glu Phe Ile Asp Asp		1105				1110					1115					3450
aaa tca act caa ctg aaa gat gtt ggt tct gtg tca ccc ata tct	Lys Ser Thr Gln Leu Lys Asp Val Gly Ser Val Ser Pro Ile Ser		1120				1125					1130					3495
ctg gcc aga aag aag ttt agt ggt aga tat gct gtc tca tct gaa	Leu Ala Arg Lys Lys Phe Ser Gly Arg Tyr Ala Val Ser Ser Glu		1135				1140					1145					3540
gaa ttc act ggt gaa atg gtt gga gct aaa tct cgt aat atc tct	Glu Phe Thr Gly Glu Met Val Gly Ala Lys Ser Arg Asn Ile Ser		1150				1155					1160					3585
tat tta aaa ggg aaa gta gct tct tgg att gga att cct acc tca	Tyr Leu Lys Gly Lys Val Ala Ser Trp Ile Gly Ile Pro Thr Ser		1165				1170					1175					3630
gtt gcc ata cca ttt gga gtt ttt gaa cat gtt ctt tct gat aaa	Val Ala Ile Pro Phe Gly Val Phe Glu His Val Leu Ser Asp Lys		1180				1185					1190					3675
cca aac cag gca gtg gct gag agg gtc aat aat ttg aaa aag aag	Pro Asn Gln Ala Val Ala Glu Arg Val Asn Asn Leu Lys Lys Lys		1195				1200					1205					3720
tta act gag gga gac ttc agt gtt ctc aag gag att cgt gaa aca	Leu Thr Glu Gly Asp Phe Ser Val Leu Lys Glu Ile Arg Glu Thr		1210				1215					1220					3765
gtt cta cag ttg aat gca cca tcc cag ttg gta gag gag ttg aaa	Val Leu Gln Leu Asn Ala Pro Ser Gln Leu Val Glu Glu Leu Lys																3810



BCS 04-5003-PCT_Erhöhte Akt. OK1 & R1_SEQUENZPROTOKOLL.ST25																
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Thr	Lys	Met	Lys	Ser	Ser	Gly	Met	Pro	Trp	Pro	Gly	Asp	Glu	Gly		
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Glu	Gln	Arg	Trp	Glu	Gln	Ala	Trp	Ile	Ala	Ile	Lys	Lys	Val	Trp		
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ggc	tca	aag	tgg	aat	gaa	aga	gca	tac	ttc	agc	aca	aga	aaa	gtg	3945	
Gly	Ser	Lys	Trp	Asn	Glu	Arg	Ala	Tyr	Phe	Ser	Thr	Arg	Lys	Val		
1270							1275							1280		
aaa	ctc	gac	cac	gaa	tat	ctt	tcc	atg	gca	gtc	ctg	gtt	cag	gaa	3990	
Lys	Leu	Asp	His	Glu	Tyr	Leu	Ser	Met	Ala	Val	Leu	Val	Gln	Glu		
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gtg	ata	aat	gct	gac	tat	gct	ttt	gtc	atc	cac	aca	act	aac	cct	4035	
Val	Ile	Asn	Ala	Asp	Tyr	Ala	Phe	Val	Ile	His	Thr	Thr	Asn	Pro		
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gcc	tct	gga	gat	tca	tcg	gaa	ata	tat	gct	gag	gtg	gta	aag	gga	4080	
Ala	Ser	Gly	Asp	Ser	Ser	Glu	Ile	Tyr	Ala	Glu	Val	Val	Lys	Gly		
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ctt	gga	gaa	aca	ctg	gtt	gga	gct	tat	cct	ggt	cgt	gct	ttg	agt	4125	
Leu	Gly	Glu	Thr	Leu	Val	Gly	Ala	Tyr	Pro	Gly	Arg	Ala	Leu	Ser		
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ttt	atc	tgc	aag	aaa	cgt	gat	ttg	aac	tct	cct	cag	gtc	ttg	ggt	4170	
Phe	Ile	Cys	Lys	Lys	Arg	Asp	Leu	Asn	Ser	Pro	Gln	Val	Leu	Gly		
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tat	cct	agc	aaa	cct	gtc	ggc	cta	ttt	ata	aga	cag	tca	att	att	4215	
Tyr	Pro	Ser	Lys	Pro	Val	Gly	Leu	Phe	Ile	Arg	Gln	Ser	Ile	Ile		
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Phe	Arg	Ser	Asp	Ser	Asn	Gly	Glu	Asp	Leu	Glu	Gly	Tyr	Ala	Gly		
1375							1380							1385		
gca	ggt	ctt	tat	gac	agt	gtg	cca	atg	gat	gaa	gcc	gag	aag	gtg	4305	
Ala	Gly	Leu	Tyr	Asp	Ser	Val	Pro	Met	Asp	Glu	Ala	Glu	Lys	Val		
1390							1395							1400		
gtg	ctt	gat	tat	tca	tca	gac	aaa	ctg	atc	ctt	gat	ggt	agt	ttt	4350	
Val	Leu	Asp	Tyr	Ser	Ser	Asp	Lys	Leu	Ile	Leu	Asp	Gly	Ser	Phe		
1405							1410							1415		
cgc	cag	tca	atc	ttg	tcc	agc	att	gcc	cgt	gca	gga	aat	gaa	att	4395	
Arg	Gln	Ser	Ile	Leu	Ser	Ser	Ile	Ala	Arg	Ala	Gly	Asn	Glu	Ile		
1420							1425							1430		
gaa	gag	ttg	tat	ggc	act	cct	cag	gac	att	gaa	ggt	gtc	atc	aag	4440	
Glu	Glu	Leu	Tyr	Gly	Thr	Pro	Gln	Asp	Ile	Glu	Gly	Val	Ile	Lys		
1435							1440							1445		
gat	ggc	aaa	gtc	tat	gtt	gtc	cag	acc	aga	cca	caa	atg	taa		4482	
Asp	Gly	Lys	Val	Tyr	Val	Val	Gln	Thr	Arg	Pro	Gln	Met				
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acttgcatcac ccatgtcttc taagccacct acctcaacta tgttcatccc cgagcaacac														4542		
gtcgttttcaa acgtggccgt ggcagcttct gtgagttcaa gagtaacccc cggattacca														4602		
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BCS 04-5003-PCT\_Erhöhte Akt. OK1 & R1\_SEQUENZPROTOKOLL.ST25  
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 20 25 30

Lys Gly Lys Lys Asn Leu Phe Leu Ala Pro Thr Asn Phe Arg Gly Ser  
 35 40 45

Arg Leu Cys Val Arg Lys Arg Lys Leu Thr Met Gly Arg His His His  
 50 55 60

Arg His Val Asp Ala Val Pro Arg Ala Val Leu Thr Thr Asn Leu Ala  
 65 70 75 80

Ser Glu Leu Ser Gly Lys Phe Asn Leu Asp Gly Asn Ile Glu Leu Gln  
 85 90 95

Ile Ala Val Ser Ser Ser Glu Pro Gly Ala Ala Arg Gln Val Asp Phe  
 100 105 110

Lys Val Ser Tyr Asn Ser Glu Ser Leu Leu Leu His Trp Gly Val Val  
 115 120 125

Arg Asp Gln Pro Gly Lys Trp Val Leu Pro Ser Arg His Pro Asp Gly  
 130 135 140

Thr Lys Asn Tyr Lys Ser Arg Ala Leu Arg Thr Pro Phe Val Lys Ser  
 145 150 155 160

Asp Ser Gly Ser Phe Leu Lys Ile Glu Ile Asp Asp Pro Ala Ala Gln  
 165 170 175

Ala Ile Glu Phe Leu Ile Leu Asp Glu Ala Lys Asn Lys Trp Phe Lys  
 180 185 190

Asn Asn Gly Glu Asn Phe His Ile Lys Leu Pro Val Lys Ser Lys Leu  
 195 200 205

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Ser Gln Glu Val Ser Val Pro Glu Asp Leu Val Gln Ile Gln Ala Tyr  
 210 215 220  
 Leu Arg Trp Glu Arg Lys Gly Lys Gln Met Tyr Thr Pro Glu Gln Glu  
 225 230 235 240  
 Lys Glu Glu Tyr Glu Ala Ala Arg Asn Glu Leu Leu Glu Glu Val Ala  
 245 250 255  
 Arg Gly Thr Ser Val Arg Asp Leu His Ala Arg Leu Thr Lys Lys Thr  
 260 265 270  
 Lys Ala Ala Glu Val Lys Glu Pro Ser Val Ser Glu Thr Lys Thr Ile  
 275 280 285  
 Pro Asp Glu Leu Val Gln Ile Gln Ala Phe Ile Arg Trp Glu Lys Ala  
 290 295 300  
 Gly Lys Pro Asn Tyr Ser Arg Glu Gln Gln Leu Met Glu Phe Glu Glu  
 305 310 315 320  
 Ala Arg Lys Glu Leu Leu Glu Glu Leu Glu Lys Gly Ala Ser Leu Asp  
 325 330 335  
 Ala Ile Arg Lys Lys Ile Val Lys Gly Glu Ile Gln Thr Lys Val Ala  
 340 345 350  
 Lys Gln Leu Lys Thr Lys Lys Tyr Phe Arg Ala Glu Arg Ile Gln Arg  
 355 360 365  
 Lys Lys Arg Asp Leu Met Gln Leu Ile Asn Arg Asn Val Ala Gln Asn  
 370 375 380  
 Ile Val Glu Gln Val Ile Asp Ala Pro Lys Ala Leu Thr Val Ile Glu  
 385 390 395 400  
 His Tyr Ala Asn Ala Arg Glu Glu Tyr Glu Ser Gly Pro Val Leu Asn  
 405 410 415  
 Lys Thr Ile Tyr Lys Leu Gly Asp Asn Tyr Leu Leu Val Leu Val Thr  
 420 425 430  
 Lys Asp Ala Gly Lys Ile Lys Val His Leu Ala Thr Asp Ser Lys Lys  
 435 440 445  
 Pro Phe Thr Leu His Trp Ala Leu Ser Arg Thr Ser Glu Glu Trp Leu  
 450 455 460  
 Val Pro Pro Glu Thr Ala Leu Pro Pro Gly Ser Val Thr Met Asn Glu  
 465 470 475 480

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Ala Ala Glu Thr Pro Phe Lys Ala Gly Ser Ser Ser His Pro Ser Tyr  
485 490 495

Glu Val Gln Ser Leu Asp Ile Glu Val Asp Asp Asp Thr Phe Lys Gly  
500 505 510

Ile Pro Phe Val Ile Leu Ser Asp Gly Glu Trp Ile Lys Asn Asn Gly  
515 520 525

Ser Asn Phe Tyr Ile Glu Phe Gly Gly Lys Lys Gln Lys Gln Lys Asp  
530 535 540

Phe Gly Asn Gly Lys Gly Thr Ala Lys Phe Leu Leu Asn Lys Ile Ala  
545 550 555 560

Glu Met Glu Ser Glu Ala Gln Lys Ser Phe Met His Arg Phe Asn Ile  
565 570 575

Ala Ser Asp Leu Ile Asp Glu Ala Lys Asn Ala Gly Gln Leu Gly Leu  
580 585 590

Ala Gly Ile Leu Val Trp Met Arg Phe Met Ala Thr Arg Gln Leu Ile  
595 600 605

Trp Asn Lys Asn Tyr Asn Val Lys Pro Arg Glu Ile Ser Lys Ala Gln  
610 615 620

Asp Arg Leu Thr Asp Leu Leu Gln Asp Val Tyr Ala Asn Tyr Pro Gln  
625 630 635 640

Tyr Arg Glu Ile Val Arg Met Ile Leu Ser Thr Val Gly Arg Gly Gly  
645 650 655

Glu Gly Asp Val Gly Gln Arg Ile Arg Asp Glu Ile Leu Val Ile Gln  
660 665 670

Arg Asn Asn Asp Cys Lys Gly Gly Met Met Glu Glu Trp His Gln Lys  
675 680 685

Leu His Asn Asn Thr Ser Pro Asp Asp Val Val Ile Cys Gln Ala Leu  
690 695 700

Ile Asp Tyr Ile Asn Ser Asp Phe Asp Ile Gly Val Tyr Trp Lys Ala  
705 710 715 720

Leu Asn Asp Asn Arg Ile Thr Lys Glu Arg Leu Leu Ser Tyr Asp Arg  
725 730 735

Ala Ile His Ser Glu Pro Asn Phe Arg Arg Asp Gln Lys Glu Gly Leu  
740 745 750

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Leu Arg Asp Leu Gly Asn Tyr Met Arg Thr Leu Lys Ala Val His Ser  
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 Gly Ala Asp Leu Glu Ser Ala Ile Ser Asn Cys Met Gly Tyr Lys Ser  
 770 775 780  
 Glu Gly Gln Gly Phe Met Val Gly Val Lys Ile Asn Pro Val Pro Gly  
 785 790 795 800  
 Leu Pro Thr Gly Phe Pro Glu Leu Leu Glu Phe Val Met Glu His Val  
 805 810 815  
 Glu Glu Lys Asn Val Glu Pro Leu Leu Glu Gly Leu Leu Glu Ala Arg  
 820 825 830  
 Gln Glu Leu Gln Pro Ser Leu Ser Lys Ser Gln Ser Arg Leu Lys Asp  
 835 840 845  
 Leu Ile Phe Leu Asp Val Ala Leu Asp Ser Thr Val Arg Thr Ala Val  
 850 855 860  
 Glu Arg Ser Tyr Glu Glu Leu Asn Asn Ala Gly Pro Glu Lys Ile Met  
 865 870 875 880  
 Tyr Phe Ile Ser Leu Val Leu Glu Asn Leu Ala Leu Ser Ser Asp Asp  
 885 890 895  
 Asn Glu Asp Leu Ile Tyr Cys Leu Lys Gly Trp Asp Val Ala Leu Ser  
 900 905 910  
 Met Cys Lys Ile Lys Asp Thr His Trp Ala Leu Tyr Ala Lys Ser Val  
 915 920 925  
 Leu Asp Arg Thr Arg Leu Ala Leu Thr Asn Lys Ala His Leu Tyr Gln  
 930 935 940  
 Glu Ile Leu Gln Pro Ser Ala Glu Tyr Leu Gly Ser Leu Leu Gly Val  
 945 950 955 960  
 Asp Lys Trp Ala Val Glu Ile Phe Thr Glu Glu Ile Ile Arg Ala Gly  
 965 970 975  
 Ser Ala Ala Ser Leu Ser Thr Leu Leu Asn Arg Leu Asp Pro Val Leu  
 980 985 990  
 Arg Lys Thr Ala His Leu Gly Ser Trp Gln Val Ile Ser Pro Val Glu  
 995 1000 1005  
 Thr Val Gly Tyr Val Glu Val Val Asp Glu Leu Leu Thr Val Gln  
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## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Asn Lys Ser Tyr Glu Arg Pro Thr Ile Leu Ile Ala Asn Ser Val  
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 Lys Gly Glu Glu Glu Ile Pro Asp Gly Thr Val Ala Val Leu Thr  
 1040 1045 1050  
 Pro Asp Met Pro Asp Val Leu Ser His Val Ser Val Arg Ala Arg  
 1055 1060 1065  
 Asn Ser Lys Val Cys Phe Ala Thr Cys Phe Asp Pro Asn Ile Leu  
 1070 1075 1080  
 Ala Asn Leu Gln Glu Tyr Lys Gly Lys Leu Leu Arg Leu Lys Pro  
 1085 1090 1095  
 Thr Ser Ala Asp Val Val Tyr Ser Glu Val Lys Glu Gly Glu Phe  
 1100 1105 1110  
 Ile Asp Asp Lys Ser Thr Gln Leu Lys Asp Val Gly Ser Val Ser  
 1115 1120 1125  
 Pro Ile Ser Leu Ala Arg Lys Lys Phe Ser Gly Arg Tyr Ala Val  
 1130 1135 1140  
 Ser Ser Glu Glu Phe Thr Gly Glu Met Val Gly Ala Lys Ser Arg  
 1145 1150 1155  
 Asn Ile Ser Tyr Leu Lys Gly Lys Val Ala Ser Trp Ile Gly Ile  
 1160 1165 1170  
 Pro Thr Ser Val Ala Ile Pro Phe Gly Val Phe Glu His Val Leu  
 1175 1180 1185  
 Ser Asp Lys Pro Asn Gln Ala Val Ala Glu Arg Val Asn Asn Leu  
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 Lys Lys Lys Leu Thr Glu Gly Asp Phe Ser Val Leu Lys Glu Ile  
 1205 1210 1215  
 Arg Glu Thr Val Leu Gln Leu Asn Ala Pro Ser Gln Leu Val Glu  
 1220 1225 1230  
 Glu Leu Lys Thr Lys Met Lys Ser Ser Gly Met Pro Trp Pro Gly  
 1235 1240 1245  
 Asp Glu Gly Glu Gln Arg Trp Glu Gln Ala Trp Ile Ala Ile Lys  
 1250 1255 1260  
 Lys Val Trp Gly Ser Lys Trp Asn Glu Arg Ala Tyr Phe Ser Thr  
 1265 1270 1275

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Arg Lys Val Lys Leu Asp His Glu Tyr Leu Ser Met Ala Val Leu  
 1280 1285 1290  
 Val Gln Glu Val Ile Asn Ala Asp Tyr Ala Phe Val Ile His Thr  
 1295 1300 1305  
 Thr Asn Pro Ala Ser Gly Asp Ser Ser Glu Ile Tyr Ala Glu Val  
 1310 1315 1320  
 Val Lys Gly Leu Gly Glu Thr Leu Val Gly Ala Tyr Pro Gly Arg  
 1325 1330 1335  
 Ala Leu Ser Phe Ile Cys Lys Lys Arg Asp Leu Asn Ser Pro Gln  
 1340 1345 1350  
 Val Leu Gly Tyr Pro Ser Lys Pro Val Gly Leu Phe Ile Arg Gln  
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 Ser Ile Ile Phe Arg Ser Asp Ser Asn Gly Glu Asp Leu Glu Gly  
 1370 1375 1380  
 Tyr Ala Gly Ala Gly Leu Tyr Asp Ser Val Pro Met Asp Glu Ala  
 1385 1390 1395  
 Glu Lys Val Val Leu Asp Tyr Ser Ser Asp Lys Leu Ile Leu Asp  
 1400 1405 1410  
 Gly Ser Phe Arg Gln Ser Ile Leu Ser Ser Ile Ala Arg Ala Gly  
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 Asn Glu Ile Glu Glu Leu Tyr Gly Thr Pro Gln Asp Ile Glu Gly  
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BCS 04-5003-PCT\_Erhöhte Akt. OK1 & R1\_SEQUENZPROTOKOLL.ST25

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Ser	Thr	Leu	Val	Pro	Glu	Asp	Leu	Val	Gln	Ile	Gln	Ala	Tyr	Leu	Arg	
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Trp	Glu	Arg	Arg	Gly	Lys	Gln	Ser	Tyr	Thr	Pro	Glu	Gln	Glu	Lys	Glu	
				235					240					245		
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Glu	Tyr	Glu	Ala	Ala	Arg	Ala	Glu	Leu	Ile	Glu	Glu	Val	Asn	Arg	Gly	
			250					255					260			
gtt	tct	tta	gag	aag	ctt	cga	gct	aaa	ttg	aca	aaa	gca	cct	gaa	gca	991
Val	Ser	Leu	Glu	Lys	Leu	Arg	Ala	Lys	Leu	Thr	Lys	Ala	Pro	Glu	Ala	
		265					270					275				
cct	gag	tcg	gat	gaa	agt	aaa	tct	tct	gca	tct	cga	atg	ccc	atc	ggt	1039
Pro	Glu	Ser	Asp	Glu	Ser	Lys	Ser	Ser	Ala	Ser	Arg	Met	Pro	Ile	Gly	
	280					285					290					
aaa	ctt	cca	gag	gat	ctt	gta	cag	gtg	cag	gct	tat	ata	agg	tgg	gag	1087
Lys	Leu	Pro	Glu	Asp	Leu	Val	Gln	Val	Gln	Ala	Tyr	Ile	Arg	Trp	Glu	
295					300					305					310	
caa	gcg	ggc	aag	cca	aac	tat	cct	cct	gag	aag	caa	ctg	gta	gaa	ttt	1135
Gln	Ala	Gly	Lys	Pro	Asn	Tyr	Pro	Pro	Glu	Lys	Gln	Leu	Val	Glu	Phe	
				315					320					325		
gag	gaa	gca	agg	aag	gaa	ctg	cag	gct	gag	gtg	gac	aag	gga	atc	tct	1183
Glu	Glu	Ala	Arg	Lys	Glu	Leu	Gln	Ala	Glu	Val	Asp	Lys	Gly	Ile	Ser	
			330				335						340			
att	gat	cag	ttg	agg	cag	aaa	att	ttg	aaa	gga	aac	att	gag	agt	aaa	1231
Ile	Asp	Gln	Leu	Arg	Gln	Lys	Ile	Leu	Lys	Gly	Asn	Ile	Glu	Ser	Lys	
		345					350					355				
gtt	tcc	aag	cag	ctg	aag	aac	aag	aag	tac	ttc	tct	gta	gaa	agg	att	1279
Val	Ser	Lys	Gln	Leu	Lys	Asn	Lys	Lys	Tyr	Phe	Ser	Val	Glu	Arg	Ile	
	360					365					370					
cag	cgc	aaa	aag	aga	gat	atc	aca	caa	ctt	ctc	agt	aaa	cat	aag	cat	1327
Gln	Arg	Lys	Lys	Arg	Asp	Ile	Thr	Gln	Leu	Leu	Ser	Lys	His	Lys	His	
375					380					385					390	
aca	ctt	gtg	gaa	gat	aaa	gta	gag	gtt	gta	cca	aaa	caa	cca	act	gtt	1375
Thr	Leu	Val	Glu	Asp	Lys	Val	Glu	Val	Val	Pro	Lys	Gln	Pro	Thr	Val	
				395					400					405		
ctt	gat	ctc	ttc	acc	aag	tct	tta	cat	gag	aag	gat	ggc	tgt	gaa	gtt	1423
Leu	Asp	Leu	Phe	Thr	Lys	Ser	Leu	His	Glu	Lys	Asp	Gly	Cys	Glu	Val	
			410					415					420			
cta	agc	aga	aag	ctc	ttc	aag	ttc	ggc	gat	aaa	gag	ata	ctg	gca	att	1471
Leu	Ser	Arg	Lys	Leu	Phe	Lys	Phe	Gly	Asp	Lys	Glu	Ile	Leu	Ala	Ile	
		425					430					435				
tct	acc	aag	gtt	caa	aat	aaa	aca	gaa	gtt	cac	ttg	gca	aca	aac	cat	1519
Ser	Thr	Lys	Val	Gln	Asn	Lys	Thr	Glu	Val	His	Leu	Ala	Thr	Asn	His	
	440					445					450					
acc	gac	cca	ctt	att	ctt	cac	tgg	tct	ttg	gca	aaa	aat	gct	gga	gaa	1567
Thr	Asp	Pro	Leu	Ile	Leu	His	Trp	Ser	Leu	Ala	Lys	Asn	Ala	Gly	Glu	

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455	460					465					470						
tgg aag gca cct tct cca aat ata ttg cca tct ggt tcc aca ttg ctg	Trp	Lys	Ala	Pro	Ser	Pro	Asn	Ile	Leu	Pro	Ser	Gly	Ser	Thr	Leu	Leu	1615
					475					480					485		
gac aag gcg tgt gaa act gaa ttt act aaa tct gaa ttg gat ggt ttg	Asp	Lys	Ala	Cys	Glu	Thr	Glu	Phe	Thr	Lys	Ser	Glu	Leu	Asp	Gly	Leu	1663
				490					495					500			
cat tac cag gtt gtt gag ata gag ctt gat gat gga gga tac aaa gga	His	Tyr	Gln	Val	Val	Glu	Ile	Glu	Leu	Asp	Asp	Gly	Gly	Tyr	Lys	Gly	1711
			505					510					515				
atg cca ttt gtt ctt cgg tct ggt gaa aca tgg aaa aaa aat aat ggt	Met	Pro	Phe	Val	Leu	Arg	Ser	Gly	Glu	Thr	Trp	Lys	Lys	Asn	Asn	Gly	1759
							525					530					
tct gat ttt ttc cta gat ttc agc acc cat gat gtc aga aat att aag	Ser	Asp	Phe	Phe	Leu	Asp	Phe	Ser	Thr	His	Asp	Val	Arg	Asn	Ile	Lys	1807
						540					545					550	
tta aag ggc aat ggt gat gct ggt aaa ggt act gct aag gca ttg ctg	Leu	Lys	Gly	Asn	Gly	Asp	Ala	Gly	Lys	Gly	Thr	Ala	Lys	Ala	Leu	Leu	1855
					555					560					565		
gag aga ata gca gat ctg gag gaa gat gcc cag cga tct ctt atg cac	Glu	Arg	Ile	Ala	Asp	Leu	Glu	Glu	Asp	Ala	Gln	Arg	Ser	Leu	Met	His	1903
				570					575					580			
aga ttc aat att gca gca gat cta gct gac caa gcc aga gat gct gga	Arg	Phe	Asn	Ile	Ala	Ala	Asp	Leu	Ala	Asp	Gln	Ala	Arg	Asp	Ala	Gly	1951
			585					590					595				
ctt ttg ggt att gtt ggg ctt ttt gtt tgg att aga ttc atg gct acc	Leu	Leu	Gly	Ile	Val	Gly	Leu	Phe	Val	Trp	Ile	Arg	Phe	Met	Ala	Thr	1999
			600				605					610					
agg caa cta aca tgg aat aag aac tat aat gtg aag cca cgt gag ata	Arg	Gln	Leu	Thr	Trp	Asn	Lys	Asn	Tyr	Asn	Val	Lys	Pro	Arg	Glu	Ile	2047
						620					625					630	
agc aaa gca cag gat agg ttt aca gat gat ctt gag aat atg tac aaa	Ser	Lys	Ala	Gln	Asp	Arg	Phe	Thr	Asp	Asp	Leu	Glu	Asn	Met	Tyr	Lys	2095
					635					640					645		
gct tat cca cag tac aga gag ata tta aga atg ata atg gct gct gtt	Ala	Tyr	Pro	Gln	Tyr	Arg	Glu	Ile	Leu	Arg	Met	Ile	Met	Ala	Ala	Val	2143
				650					655					660			
ggt cgc gga ggt gaa ggt gat gtt ggt caa cgc att cgt gat gag ata	Gly	Arg	Gly	Gly	Glu	Gly	Asp	Val	Gly	Gln	Arg	Ile	Arg	Asp	Glu	Ile	2191
			665					670					675				
tta gta ata cag aga aat aat gac tgc aaa ggt gga atg atg gaa gaa	Leu	Val	Ile	Gln	Arg	Asn	Asn	Asp	Cys	Lys	Gly	Gly	Met	Met	Glu	Glu	2239
						685						690					
tgg cac cag aaa ttg cac aac aat aca agc cca gat gat gta gtg ata	Trp	His	Gln	Lys	Leu	His	Asn	Asn	Thr	Ser	Pro	Asp	Asp	Val	Val	Ile	2287
						700					705					710	
tgc cag gcc tta att gat tat atc aag agt gac ttt gat ata agc gtt	Cys	Gln	Ala	Leu	Ile	Asp	Tyr	Ile	Lys	Ser	Asp	Phe	Asp	Ile	Ser	Val	2335
					715					720					725		
tac tgg gac acc ttg aac aaa aat ggc ata acc aaa gag cgt ctc ttg	Tyr	Trp	Asp	Thr	Leu	Asn	Lys	Asn	Gly	Ile	Thr	Lys	Glu	Arg	Leu	Leu	2383

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730 735 740																
agc	tat	gat	cgt	gct	att	cat	tca	gaa	cca	aat	ttc	aga	agt	gaa	cag	2431
Ser	Tyr	Asp	Arg	Ala	Ile	His	Ser	Glu	Pro	Asn	Phe	Arg	Ser	Glu	Gln	
		745					750					755				
aag	gcg	ggg	tta	ctc	cgt	gac	ctg	gga	aat	tac	atg	aga	agc	cta	aag	2479
Lys	Ala	Gly	Leu	Leu	Arg	Asp	Leu	Gly	Asn	Tyr	Met	Arg	Ser	Leu	Lys	
	760					765					770					
gct	gtg	cat	tct	ggg	gct	gat	ctt	gaa	tct	gct	ata	gca	agt	tgt	atg	2527
Ala	Val	His	Ser	Gly	Ala	Asp	Leu	Glu	Ser	Ala	Ile	Ala	Ser	Cys	Met	
775					780					785					790	
gga	tac	aaa	tca	gag	ggg	gaa	ggg	ttc	atg	ggt	ggg	ggt	cag	atc	aat	2575
Gly	Tyr	Lys	Ser	Glu	Gly	Glu	Gly	Phe	Met	Val	Gly	Val	Gln	Ile	Asn	
				795					800					805		
cca	gtg	aag	ggg	tta	cca	tct	gga	ttt	ccg	gag	ttg	ctt	gaa	ttt	gtg	2623
Pro	Val	Lys	Gly	Leu	Pro	Ser	Gly	Phe	Pro	Glu	Leu	Leu	Glu	Phe	Val	
			810					815					820			
ctt	gaa	cat	gtt	gag	gat	aaa	tca	gcg	gaa	cca	ctt	ctt	gag	ggg	cta	2671
Leu	Glu	His	Val	Glu	Asp	Lys	Ser	Ala	Glu	Pro	Leu	Leu	Glu	Gly	Leu	
		825					830					835				
ttg	gaa	gct	cga	gtt	gaa	ctg	cgc	cct	ttg	ctt	ctt	gat	tcg	cgt	gaa	2719
Leu	Glu	Ala	Arg	Val	Glu	Leu	Arg	Pro	Leu	Leu	Leu	Asp	Ser	Arg	Glu	
	840					845					850					
cgc	atg	aaa	gat	ctt	ata	ttt	ttg	gac	att	gct	ctt	gat	tct	acc	ttc	2767
Arg	Met	Lys	Asp	Leu	Ile	Phe	Leu	Asp	Ile	Ala	Leu	Asp	Ser	Thr	Phe	
855					860					865					870	
agg	aca	gca	att	gaa	agg	tca	tat	gag	gag	ctg	aat	gat	gca	gcc	cca	2815
Arg	Thr	Ala	Ile	Glu	Arg	Ser	Tyr	Glu	Glu	Leu	Asn	Asp	Ala	Ala	Pro	
				875					880					885		
gag	aaa	ata	atg	tac	ttc	atc	agt	ctt	gtc	ctt	gaa	aat	ctt	gcg	ctt	2863
Glu	Lys	Ile	Met	Tyr	Phe	Ile	Ser	Leu	Val	Leu	Glu	Asn	Leu	Ala	Leu	
			890					895					900			
tca	att	gac	gac	aat	gaa	gac	atc	ctg	tat	tgt	tta	aag	gga	tgg	aac	2911
Ser	Ile	Asp	Asp	Asn	Glu	Asp	Ile	Leu	Tyr	Cys	Leu	Lys	Gly	Trp	Asn	
		905					910					915				
caa	gcc	ttg	gaa	atg	gct	aag	caa	aaa	gac	gac	caa	tgg	gcg	ctc	tat	2959
Gln	Ala	Leu	Glu	Met	Ala	Lys	Gln	Lys	Asp	Asp	Gln	Trp	Ala	Leu	Tyr	
	920					925					930					
gct	aaa	gca	ttt	ctt	gac	aga	aac	aga	ctt	gcc	ctt	gcg	agc	aag	gga	3007
Ala	Lys	Ala	Phe	Leu	Asp	Arg	Asn	Arg	Leu	Ala	Leu	Ala	Ser	Lys	Gly	
935					940					945					950	
gaa	caa	tac	cat	aat	atg	atg	cag	ccc	tct	gct	gag	tat	ctt	ggc	tcg	3055
Glu	Gln	Tyr	His	Asn	Met	Met	Gln	Pro	Ser	Ala	Glu	Tyr	Leu	Gly	Ser	
				955					960					965		
tta	ctc	agc	ata	gac	caa	tgg	gca	gtc	aat	atc	ttc	aca	gaa	gaa	att	3103
Leu	Leu	Ser	Ile	Asp	Gln	Trp	Ala	Val	Asn	Ile	Phe	Thr	Glu	Glu	Ile	
			970					975					980			
ata	cgc	ggg	gga	tca	gct	gct	act	ctg	tct	gct	ctt	ctg	aac	cga	ttt	3151
Ile	Arg	Gly	Gly	Ser	Ala	Ala	Thr	Leu	Ser	Ala	Leu	Leu	Asn	Arg	Phe	
		985					990					995				
gat	cct	gtt	tta	agg	aat	gtt	gct	cac	ctc	gga	agt	tgg	cag	gtt		3196
Asp	Pro	Val	Leu	Arg	Asn	Val	Ala	His	Leu	Gly	Ser	Trp	Gln	Val		

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1000					1005					1010					
ata	agc	ccg	gtt	gaa	gta	tca	ggt	tat	gtg	gtt	gtg	ggt	gat	gag	3241
Ile	Ser	Pro	Val	Glu	Val	Ser	Gly	Tyr	Val	Val	Val	Val	Asp	Glu	
	1015					1020					1025				
tta	ctt	gct	gtc	cag	aac	aaa	tct	tat	gat	aaa	cca	acc	atc	ctt	3286
Leu	Leu	Ala	Val	Gln	Asn	Lys	Ser	Tyr	Asp	Lys	Pro	Thr	Ile	Leu	
	1030					1035					1040				
gtg	gca	aag	agt	gtc	aag	gga	gag	gaa	gaa	ata	cca	gat	gga	gta	3331
Val	Ala	Lys	Ser	Val	Lys	Gly	Glu	Glu	Glu	Ile	Pro	Asp	Gly	Val	
	1045					1050					1055				
gtt	ggt	gta	att	aca	cct	gat	atg	cca	gat	gtt	ctg	tct	cat	gtg	3376
Val	Gly	Val	Ile	Thr	Pro	Asp	Met	Pro	Asp	Val	Leu	Ser	His	Val	
	1060					1065					1070				
tca	gtc	cga	gca	agg	aat	agc	aag	gta	ctg	ttt	gcg	acc	tgt	ttt	3421
Ser	Val	Arg	Ala	Arg	Asn	Ser	Lys	Val	Leu	Phe	Ala	Thr	Cys	Phe	
	1075					1080					1085				
gac	cac	acc	act	cta	tct	gaa	ctt	gaa	gga	tat	gat	cag	aaa	ctg	3466
Asp	His	Thr	Thr	Leu	Ser	Glu	Leu	Glu	Gly	Tyr	Asp	Gln	Lys	Leu	
	1090					1095					1100				
ttt	tcc	ttc	aag	cct	act	tct	gca	gat	ata	acc	tat	agg	gag	atc	3511
Phe	Ser	Phe	Lys	Pro	Thr	Ser	Ala	Asp	Ile	Thr	Tyr	Arg	Glu	Ile	
	1105					1110					1115				
aca	gag	agt	gaa	ctt	cag	caa	tca	agt	tct	cca	aat	gca	gaa	gtt	3556
Thr	Glu	Ser	Glu	Leu	Gln	Gln	Ser	Ser	Ser	Pro	Asn	Ala	Glu	Val	
	1120					1125					1130				
ggc	cat	gca	gta	cca	tct	att	tca	ttg	gcc	aag	aag	aaa	ttt	ctt	3601
Gly	His	Ala	Val	Pro	Ser	Ile	Ser	Leu	Ala	Lys	Lys	Lys	Phe	Leu	
	1135					1140					1145				
gga	aaa	tat	gca	ata	tca	gcc	gaa	gaa	ttc	tct	gag	gaa	atg	gtt	3646
Gly	Lys	Tyr	Ala	Ile	Ser	Ala	Glu	Glu	Phe	Ser	Glu	Glu	Met	Val	
	1150					1155					1160				
ggg	gcc	aag	tct	cgg	aat	ata	gca	tac	ctc	aaa	gga	aaa	gta	cct	3691
Gly	Ala	Lys	Ser	Arg	Asn	Ile	Ala	Tyr	Leu	Lys	Gly	Lys	Val	Pro	
	1165					1170					1175				
tca	tgg	gtc	ggt	gtc	cca	acg	tca	gtt	gcg	ata	cca	ttt	ggc	act	3736
Ser	Trp	Val	Gly	Val	Pro	Thr	Ser	Val	Ala	Ile	Pro	Phe	Gly	Thr	
	1180					1185					1190				
ttt	gag	aag	gtt	ttg	tca	gat	ggg	ctt	aat	aag	gaa	gta	gca	cag	3781
Phe	Glu	Lys	Val	Leu	Ser	Asp	Gly	Leu	Asn	Lys	Glu	Val	Ala	Gln	
	1195					1200					1205				
agc	ata	gag	aag	ctt	aag	atc	aga	ctt	gcc	caa	gaa	gat	ttt	agt	3826
Ser	Ile	Glu	Lys	Leu	Lys	Ile	Arg	Leu	Ala	Gln	Glu	Asp	Phe	Ser	
	1210					1215					1220				
gct	cta	ggt	gaa	ata	aga	aaa	gtc	gtc	ctt	aat	ctt	act	gct	cct	3871
Ala	Leu	Gly	Glu	Ile	Arg	Lys	Val	Val	Leu	Asn	Leu	Thr	Ala	Pro	
	1225					1230					1235				
atg	caa	ttg	gtt	aat	gag	ctg	aag	gag	agg	atg	cta	ggc	tct	gga	3916
Met	Gln	Leu	Val	Asn	Glu	Leu	Lys	Glu	Arg	Met	Leu	Gly	Ser	Gly	
	1240					1245					1250				
atg	ccc	tgg	cct	ggt	gat	gaa	gga	gac	aag	cgt	tgg	gag	caa	gca	3961
Met	Pro	Trp	Pro	Gly	Asp	Glu	Gly	Asp	Lys	Arg	Trp	Glu	Gln	Ala	

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1255	1260											1265	
tgg atg gct att aaa aag gtt tgg gca tca aaa tgg aac gaa aga 4006	Trp Met Ala Ile Lys Lys Val Trp Ala Ser Lys Trp Asn Glu Arg	1270			1275					1280			
gca tat ttt agc aca cgc aag gtg aaa ctt gat cat gag tac ctt 4051	Ala Tyr Phe Ser Thr Arg Lys Val Lys Leu Asp His Glu Tyr Leu	1285			1290					1295			
tcg atg gct gtt ctc gtg caa gaa gtt gtg aat gca gat tat gct 4096	Ser Met Ala Val Leu Val Gln Glu Val Val Asn Ala Asp Tyr Ala	1300			1305					1310			
ttt gtc att cat acc aca aac cca tcg tct gga gat tct tct gag 4141	Phe Val Ile His Thr Thr Asn Pro Ser Ser Gly Asp Ser Ser Glu	1315			1320					1325			
ata tat gct gaa gtg gtg aaa ggg ctt ggc gag acc ctc gtg gga 4186	Ile Tyr Ala Glu Val Val Lys Gly Leu Gly Glu Thr Leu Val Gly	1330			1335					1340			
gcc tat cct ggt cgt gct atg agc ttt gtt tgc aaa aaa gat gac 4231	Ala Tyr Pro Gly Arg Ala Met Ser Phe Val Cys Lys Lys Asp Asp	1345			1350					1355			
ctt gac tct ccc aag tta ctt ggt tac cca agc aag cca att ggt 4276	Leu Asp Ser Pro Lys Leu Leu Gly Tyr Pro Ser Lys Pro Ile Gly	1360			1365					1370			
ctc ttc ata agg caa tca atc atc ttc cgt tcc gac tcc aac ggt 4321	Leu Phe Ile Arg Gln Ser Ile Ile Phe Arg Ser Asp Ser Asn Gly	1375			1380					1385			
gag gac ctg gaa ggt tat gct gga gca gga tta tat gat agt gta 4366	Glu Asp Leu Glu Gly Tyr Ala Gly Ala Gly Leu Tyr Asp Ser Val	1390			1395					1400			
ccg atg gat gag gag gat gag gtt gta ctt gat tat aca act gac 4411	Pro Met Asp Glu Glu Asp Glu Val Val Leu Asp Tyr Thr Thr Asp	1405			1410					1415			
cct ctt ata gta gac cgt gga ttc cga agc tca atc ctc tca agc 4456	Pro Leu Ile Val Asp Arg Gly Phe Arg Ser Ser Ile Leu Ser Ser	1420			1425					1430			
ata gca cgg gct ggc cat gcc atc gag gag cta tat ggt tct cct 4501	Ile Ala Arg Ala Gly His Ala Ile Glu Glu Leu Tyr Gly Ser Pro	1435			1440					1445			
cag gac gtc gag gga gta gtg aag gat gga aaa atc tat gta gtc 4546	Gln Asp Val Glu Gly Val Val Lys Asp Gly Lys Ile Tyr Val Val	1450			1455					1460			
cag aca aga cca cag atg tag tatgtatgca tctattagac agctcaataa 4597	Gln Thr Arg Pro Gln Met	1465											
gcactgtttgt acgcttgtat gggtgggaca tatgggcgtt atggcatgta tagttgtatg 4657													
cctagatgta caacacgtgt actcgtatat atatataaa atgctgaaac aagcattggt 4717													
cctgtactgt agtttctaca tttcattgtc accaataatt aagtgtactc ctatggctgg 4777													
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aaaaaaaaag 4846													

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&lt;210&gt; 17

&lt;211&gt; 1469

&lt;212&gt; PRT

&lt;213&gt; Zea mays

&lt;400&gt; 17

Met Ser Gly Phe Ser Ala Ala Ala Asn Ala Ala Ala Ala Glu Arg Cys  
 1 5 10 15

Ala Leu Ala Phe Arg Ala Arg Pro Ala Ala Ser Ser Pro Ala Lys Arg  
 20 25 30

Gln Gln Gln Pro Gln Pro Ala Ser Leu Arg Arg Ser Gly Gly Gln Arg  
 35 40 45

Arg Pro Thr Thr Leu Ser Ala Ser Ser Arg Gly Pro Val Val Pro Arg  
 50 55 60

Ala Val Ala Thr Ser Ala Asp Arg Ala Ser Pro Asp Leu Ile Gly Lys  
 65 70 75 80

Phe Thr Leu Asp Ser Asn Ser Glu Leu Gln Val Ala Val Asn Pro Ala  
 85 90 95

Pro Gln Gly Leu Val Ser Glu Ile Ser Leu Glu Val Thr Asn Thr Ser  
 100 105 110

Gly Ser Leu Ile Leu His Trp Gly Ala Leu Arg Pro Asp Lys Arg Asp  
 115 120 125

Trp Ile Leu Pro Ser Arg Lys Pro Asp Gly Thr Thr Val Tyr Lys Asn  
 130 135 140

Arg Ala Leu Arg Thr Pro Phe Val Lys Ser Gly Asp Asn Ser Thr Leu  
 145 150 155 160

Arg Ile Glu Ile Asp Asp Pro Gly Val His Ala Ile Glu Phe Leu Ile  
 165 170 175

Phe Asp Glu Thr Gln Asn Lys Trp Phe Lys Asn Asn Gly Gln Asn Phe  
 180 185 190

Gln Val Gln Phe Gln Ser Ser Arg His Gln Gly Thr Gly Ala Ser Gly  
 195 200 205

Ala Ser Ser Ser Ala Thr Ser Thr Leu Val Pro Glu Asp Leu Val Gln  
 210 215 220

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Ile Gln Ala Tyr Leu Arg Trp Glu Arg Arg Gly Lys Gln Ser Tyr Thr  
 225 230 235 240  
 Pro Glu Gln Glu Lys Glu Glu Tyr Glu Ala Ala Arg Ala Glu Leu Ile  
 245 250 255  
 Glu Glu Val Asn Arg Gly Val Ser Leu Glu Lys Leu Arg Ala Lys Leu  
 260 265 270  
 Thr Lys Ala Pro Glu Ala Pro Glu Ser Asp Glu Ser Lys Ser Ser Ala  
 275 280 285  
 Ser Arg Met Pro Ile Gly Lys Leu Pro Glu Asp Leu Val Gln Val Gln  
 290 295 300  
 Ala Tyr Ile Arg Trp Glu Gln Ala Gly Lys Pro Asn Tyr Pro Pro Glu  
 305 310 315 320  
 Lys Gln Leu Val Glu Phe Glu Glu Ala Arg Lys Glu Leu Gln Ala Glu  
 325 330 335  
 Val Asp Lys Gly Ile Ser Ile Asp Gln Leu Arg Gln Lys Ile Leu Lys  
 340 345 350  
 Gly Asn Ile Glu Ser Lys Val Ser Lys Gln Leu Lys Asn Lys Lys Tyr  
 355 360 365  
 Phe Ser Val Glu Arg Ile Gln Arg Lys Lys Arg Asp Ile Thr Gln Leu  
 370 375 380  
 Leu Ser Lys His Lys His Thr Leu Val Glu Asp Lys Val Glu Val Val  
 385 390 395 400  
 Pro Lys Gln Pro Thr Val Leu Asp Leu Phe Thr Lys Ser Leu His Glu  
 405 410 415  
 Lys Asp Gly Cys Glu Val Leu Ser Arg Lys Leu Phe Lys Phe Gly Asp  
 420 425 430  
 Lys Glu Ile Leu Ala Ile Ser Thr Lys Val Gln Asn Lys Thr Glu Val  
 435 440 445  
 His Leu Ala Thr Asn His Thr Asp Pro Leu Ile Leu His Trp Ser Leu  
 450 455 460  
 Ala Lys Asn Ala Gly Glu Trp Lys Ala Pro Ser Pro Asn Ile Leu Pro  
 465 470 475 480  
 Ser Gly Ser Thr Leu Leu Asp Lys Ala Cys Glu Thr Glu Phe Thr Lys  
 485 490 495

Ser Glu Leu Asp Gly Leu His Tyr Gln Val Val Glu Ile Glu Leu Asp  
500 505 510

Asp Gly Gly Tyr Lys Gly Met Pro Phe Val Leu Arg Ser Gly Glu Thr  
515 520 525

Trp Lys Lys Asn Asn Gly Ser Asp Phe Phe Leu Asp Phe Ser Thr His  
530 535 540

Asp Val Arg Asn Ile Lys Leu Lys Gly Asn Gly Asp Ala Gly Lys Gly  
545 550 555 560

Thr Ala Lys Ala Leu Leu Glu Arg Ile Ala Asp Leu Glu Glu Asp Ala  
565 570 575

Gln Arg Ser Leu Met His Arg Phe Asn Ile Ala Ala Asp Leu Ala Asp  
580 585 590

Gln Ala Arg Asp Ala Gly Leu Leu Gly Ile Val Gly Leu Phe Val Trp  
595 600 605

Ile Arg Phe Met Ala Thr Arg Gln Leu Thr Trp Asn Lys Asn Tyr Asn  
610 615 620

Val Lys Pro Arg Glu Ile Ser Lys Ala Gln Asp Arg Phe Thr Asp Asp  
625 630 635 640

Leu Glu Asn Met Tyr Lys Ala Tyr Pro Gln Tyr Arg Glu Ile Leu Arg  
645 650 655

Met Ile Met Ala Ala Val Gly Arg Gly Gly Glu Gly Asp Val Gly Gln  
660 665 670

Arg Ile Arg Asp Glu Ile Leu Val Ile Gln Arg Asn Asn Asp Cys Lys  
675 680 685

Gly Gly Met Met Glu Glu Trp His Gln Lys Leu His Asn Asn Thr Ser  
690 695 700

Pro Asp Asp Val Val Ile Cys Gln Ala Leu Ile Asp Tyr Ile Lys Ser  
705 710 715 720

Asp Phe Asp Ile Ser Val Tyr Trp Asp Thr Leu Asn Lys Asn Gly Ile  
725 730 735

Thr Lys Glu Arg Leu Leu Ser Tyr Asp Arg Ala Ile His Ser Glu Pro  
740 745 750

Asn Phe Arg Ser Glu Gln Lys Ala Gly Leu Leu Arg Asp Leu Gly Asn  
755 760 765



## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Tyr Met Arg Ser Leu Lys Ala Val His Ser Gly Ala Asp Leu Glu Ser  
 770 775 780

Ala Ile Ala Ser Cys Met Gly Tyr Lys Ser Glu Gly Glu Gly Phe Met  
 785 790 795 800

Val Gly Val Gln Ile Asn Pro Val Lys Gly Leu Pro Ser Gly Phe Pro  
 805 810 815

Glu Leu Leu Glu Phe Val Leu Glu His Val Glu Asp Lys Ser Ala Glu  
 820 825 830

Pro Leu Leu Glu Gly Leu Leu Glu Ala Arg Val Glu Leu Arg Pro Leu  
 835 840 845

Leu Leu Asp Ser Arg Glu Arg Met Lys Asp Leu Ile Phe Leu Asp Ile  
 850 855 860

Ala Leu Asp Ser Thr Phe Arg Thr Ala Ile Glu Arg Ser Tyr Glu Glu  
 865 870 875 880

Leu Asn Asp Ala Ala Pro Glu Lys Ile Met Tyr Phe Ile Ser Leu Val  
 885 890 895

Leu Glu Asn Leu Ala Leu Ser Ile Asp Asp Asn Glu Asp Ile Leu Tyr  
 900 905 910

Cys Leu Lys Gly Trp Asn Gln Ala Leu Glu Met Ala Lys Gln Lys Asp  
 915 920 925

Asp Gln Trp Ala Leu Tyr Ala Lys Ala Phe Leu Asp Arg Asn Arg Leu  
 930 935 940

Ala Leu Ala Ser Lys Gly Glu Gln Tyr His Asn Met Met Gln Pro Ser  
 945 950 955 960

Ala Glu Tyr Leu Gly Ser Leu Leu Ser Ile Asp Gln Trp Ala Val Asn  
 965 970 975

Ile Phe Thr Glu Glu Ile Ile Arg Gly Gly Ser Ala Ala Thr Leu Ser  
 980 985 990

Ala Leu Leu Asn Arg Phe Asp Pro Val Leu Arg Asn Val Ala His Leu  
 995 1000 1005

Gly Ser Trp Gln Val Ile Ser Pro Val Glu Val Ser Gly Tyr Val  
 1010 1015 1020

Val Val Val Asp Glu Leu Leu Ala Val Gln Asn Lys Ser Tyr Asp  
 1025 1030 1035

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Lys Pro Thr Ile Leu Val Ala Lys Ser Val Lys Gly Glu Glu Glu  
 1040 1045 1050  
 Ile Pro Asp Gly Val Val Gly Val Ile Thr Pro Asp Met Pro Asp  
 1055 1060 1065  
 Val Leu Ser His Val Ser Val Arg Ala Arg Asn Ser Lys Val Leu  
 1070 1075 1080  
 Phe Ala Thr Cys Phe Asp His Thr Thr Leu Ser Glu Leu Glu Gly  
 1085 1090 1095  
 Tyr Asp Gln Lys Leu Phe Ser Phe Lys Pro Thr Ser Ala Asp Ile  
 1100 1105 1110  
 Thr Tyr Arg Glu Ile Thr Glu Ser Glu Leu Gln Gln Ser Ser Ser  
 1115 1120 1125  
 Pro Asn Ala Glu Val Gly His Ala Val Pro Ser Ile Ser Leu Ala  
 1130 1135 1140  
 Lys Lys Lys Phe Leu Gly Lys Tyr Ala Ile Ser Ala Glu Glu Phe  
 1145 1150 1155  
 Ser Glu Glu Met Val Gly Ala Lys Ser Arg Asn Ile Ala Tyr Leu  
 1160 1165 1170  
 Lys Gly Lys Val Pro Ser Trp Val Gly Val Pro Thr Ser Val Ala  
 1175 1180 1185  
 Ile Pro Phe Gly Thr Phe Glu Lys Val Leu Ser Asp Gly Leu Asn  
 1190 1195 1200  
 Lys Glu Val Ala Gln Ser Ile Glu Lys Leu Lys Ile Arg Leu Ala  
 1205 1210 1215  
 Gln Glu Asp Phe Ser Ala Leu Gly Glu Ile Arg Lys Val Val Leu  
 1220 1225 1230  
 Asn Leu Thr Ala Pro Met Gln Leu Val Asn Glu Leu Lys Glu Arg  
 1235 1240 1245  
 Met Leu Gly Ser Gly Met Pro Trp Pro Gly Asp Glu Gly Asp Lys  
 1250 1255 1260  
 Arg Trp Glu Gln Ala Trp Met Ala Ile Lys Lys Val Trp Ala Ser  
 1265 1270 1275  
 Lys Trp Asn Glu Arg Ala Tyr Phe Ser Thr Arg Lys Val Lys Leu  
 1280 1285 1290

## BCS 04-5003-PCT\_Erhöhte Akt. OK1 &amp; R1\_SEQUENZPROTOKOLL.ST25

Asp His Glu Tyr Leu Ser Met Ala Val Leu Val Gln Glu Val Val  
 1295 1300 1305  
 Asn Ala Asp Tyr Ala Phe Val Ile His Thr Thr Asn Pro Ser Ser  
 1310 1315 1320  
 Gly Asp Ser Ser Glu Ile Tyr Ala Glu Val Val Lys Gly Leu Gly  
 1325 1330 1335  
 Glu Thr Leu Val Gly Ala Tyr Pro Gly Arg Ala Met Ser Phe Val  
 1340 1345 1350  
 Cys Lys Lys Asp Asp Leu Asp Ser Pro Lys Leu Leu Gly Tyr Pro  
 1355 1360 1365  
 Ser Lys Pro Ile Gly Leu Phe Ile Arg Gln Ser Ile Ile Phe Arg  
 1370 1375 1380  
 Ser Asp Ser Asn Gly Glu Asp Leu Glu Gly Tyr Ala Gly Ala Gly  
 1385 1390 1395  
 Leu Tyr Asp Ser Val Pro Met Asp Glu Glu Asp Glu Val Val Leu  
 1400 1405 1410  
 Asp Tyr Thr Thr Asp Pro Leu Ile Val Asp Arg Gly Phe Arg Ser  
 1415 1420 1425  
 Ser Ile Leu Ser Ser Ile Ala Arg Ala Gly His Ala Ile Glu Glu  
 1430 1435 1440  
 Leu Tyr Gly Ser Pro Gln Asp Val Glu Gly Val Val Lys Asp Gly  
 1445 1450 1455  
 Lys Ile Tyr Val Val Gln Thr Arg Pro Gln Met  
 1460 1465